American Forests and Forest Life

April, 1930

The American Forestry Association

Washington, D. C.

President
GEORGE D. PRATT

Treasurer
GEORGE O. VASS

Assistant Treasurer
I. J. ROBERTS

Executive Secretary
OVID BUTLER
The Lenox Building, 1523 L Street
Washington, D. C.

Forester
G. H. COLLINGWOOD

Business Manager
FRED E. HORNADAY

New York Office: 468 Fourth Avenue

Vice-Presidents

JAMES B. ASWELL—Louisiana
Representative in Congress
H. C. BALDRIDGE—Idaho
Governor of Idaho
HARRY B. BLACK—Michigan
Kiwanis Club
E. E. BROWNELL—California
Yellowstone Park Boundary Commission
CHARLES LIVINGSTON BULL—New Jersey
Artist
MRS. HERBERT HOOVER—District of Columbia
GEORGE T. HOUSTON—Mississippi
President, Southern Forestry Congress
CLIFTON D. HOWE—Canada
Dean of Forestry, University of Toronto
ALEXANDER LEGGE—Illinois
Chairman, Federal Farm Board
MRS. WILLIAM LOCKWOOD—New York
President, Garden Clubs of America
CHARLES L. McNARY—Oregon
United States Senator
ARTHUR MORGAN—Ohio
President, Antioch College
GEORGE S. PARKS—Alaska
Governor of Alaska
T. GILBERT PEARSON—New York
President, National Association of Audubon Societies
JOSEPH HYDE PRATT—North Carolina
North Carolina Forestry Association
MRS. JOHN F. SIPPEL—Maryland
President, General Federation of Women's Clubs
J. D. TENNANT—Washington
Vice-President, Long-Bell Lumber Company
JOHN J. TIGERT—Florida
President, University of Florida
HENRY BALDWIN WARD—Illinois
President, Izaak Walton League of America
FREDERIC C. WALCOTT—Connecticut
United States Senator
MRS. FRANCIS E. WHITLEY—Iowa
General Federation of Women's Clubs

Board of Directors

J. E. ALDRED, 1931—New York
Pennsylvania Water and Power Company
F. W. BESLEY, 1930—Maryland
State Forester of Maryland
W. R. BROWN, 1934—New Hampshire
Vice President, The Brown Company
HENRY SOLON GRAVES, 1932—Connecticut
Dean of Yale Forest School
WILLIAM B. GREELEY, 1933—Washington
West Coast Lumber Manufacturers Association
W. B. GREELEY, 1934—New York
Camp Fire Club of America
A. S. HOUGHTON, 1934—New York
New York State Reforestation Commission
FRANK O. LOWDEN, 1930—Illinois
Former Governor of Illinois
JOHN C. MERRIAM, 1931—District of Columbia
President, Carnegie Institution of Washington
GEORGE H. MYERS, 1929—Washington, D. C.
JOHN C. PHILLIPS, 1933—Massachusetts
Massachusetts Fish and Game Association
GEORGE W. SISSON, JR., 1930—New York
American Paper and Pulp Association
LOUIS J. TABER, 1933—Ohio
Master, National Grange
W. D. TYLER, 1932—Virginia
Southern Forestry Congress
WILLIAM P. WHARTON, 1932—Massachusetts
Secretary, National Association of Audubon Societies

What the Association Is Working For

ADEQUATE FOREST FIRE PROTECTION by federal, state, and other agencies, individually and in cooperation; the REFORESTATION OF DENUDED LANDS, chiefly valuable for timber production or the protection of stream-flow; more extensive PLANTING OF TREES by individuals, companies, municipalities, states, and the federal government; the ELIMINATION OF WASTE in the manufacture and consumption of lumber and forest products; the advancement of SOUND REMEDIAL FOREST LEGISLATION.

The ESTABLISHMENT OF NATIONAL AND STATE FORESTS where local and national interests show them to be desirable; the CONSERVATIVE MANAGEMENT OF PUBLIC AND PRIVATE FORESTS so that they may best serve the permanent needs of our citizens; the development of COMMUNITY FORESTS.

FOREST RECREATION as a growing need in the social development of the nation; the PROTECTION OF FISH AND GAME and other forms of wild life, under sound game laws; the ESTABLISHMENT OF FEDERAL AND STATE GAME PRESERVES and public shooting grounds; STATE AND NATIONAL PARKS and monuments where needed, to protect and perpetuate forest areas and objects of outstanding value; the conservation of America's WILD FLORA and FAUNA.

The EDUCATION OF THE PUBLIC, especially school children, in respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management, and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

Entered as second-class matter at the Post-office at Washington, D. C., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided in Section 1103, Act of October 3, 1917, authorized July 10, 1918.

Member A. B. C.

Copyright, 1930, by The American Forestry Association

Photograph by B. L. Brown

SPRING

"Lo! the winter is past, the rain is over and gone; The flowers appear upon the earth; The time of the singing of birds is come. And the voice of the turtle is heard in our land."

AMERICAN FORESTS AND FOREST LIFE

OVID BUTLER, *Editor*

L. M. CROMELIN *and* ERLE KAUFFMAN, *Assistant Editors*

Published Monthly—35 cents a copy—$4.00 a year

Vol. 36 APRIL, 1930 No. 4

CONTENTS

COVER—"The Fire Eagle"

THE DRIVE IS COMING DOWN
By Stewart H. Holbrook 195

THE FOUR FLORISTS
Poem by John Phelps 197

FLYING FORESTERS
By Erle Kauffman 198

WINGED WHITENESS
By Rachel M. Hutchinson 202

SOIL EROSION IN THE WEST
By Arthur E. Morgan 204

THE STORY OF EVANGELINE
By Georgia Williams Moritz 207

CHIPMUNK ISN'T A GOOD FORESTER
By D. S. Olson 209

TO A TREE IN BLOOM
Illustrated poem—Selected 210

CONSERVATION OR DEPARTMENTAL JEALOUSY—WHICH?
By H. H. Chapman 211

THE LOST LAKE
By G. E. Bentley 213

TAFT ON CONSERVATION 215

FOREST FIRES
By John C. Gifford 216

ON AND OFF THE TRAIL 218

FOREST PEOPLE: A Trailer of the High Sierras
By Juliette Mouron Hood 220

THROUGH 1930 WITH THE DIXIE CRUSADERS 222

EDITORIALS 223

SHADE TREES—THEIR KINDS AND CARE
By G. H. Collingwood 225

ANNUAL MEETING TO FEATURE NATIONALLY KNOWN SPEAKERS 229

DEPARTMENT OF SCIENCE EDUCATION
Conducted by Ellis C. Persing 232

SAPLING SAM'S SCRAPBOOK 234

AROUND THE STATES 236

LEGISLATIVE CALENDAR IN CONGRESS 243

ASK THE FORESTER 247

BOOK NEWS AND REVIEWS 248

"WHO'S WHO" AMONG OUR AUTHORS 256

SPECIAL BARGAINS IN EVERGREENS

Large Transplants at Low Cost

IN ORDER to clear ground we offer the following evergreens now in surplus at special prices. This same offer has been made at this time for several years to the readers of *American Forests* and the demand has always exceeded the supply. We suggest early orders. The stock is healthy and fully up to grade. All Eastern grown, mainly in New England. Each "X" is one transplanting.

PINES

	(100)	(1000)
Austrian		
2000 10 to 15 in. XX....	$18.00	$150.00
3000 12 to 18 in. XX....	30.00	250.00
Red (Resinosa)		
40000 12 to 18 in. X....	10.00	80.00
3000 18 to 24 in. X....	SOLD OUT	
Mugho		
3000 8 to 10 in. X.....	15.00	100.00
250 12 to 18 in. XXX B&B	100.00	900.00
Scotch (Riga Variety)		
5000 12 to 18 in. X.....	8.00	60.00
5000 18 to 24 in. X.....	10.00	80.00

SPRUCE

Colorado Blue (Pungens)		
2000 6 to 10 in. XX...	$24.00	$200.00
2000 10 to 12 in. XX...	35.00	300.00
Norway (Excelsa)		
2000 12 to 15 in. XX..	15.00	120.00
White (Alba)		
10000 12 to 18 in. X....	9.00	70.00
Koster Blue		
2000 4 to 8 in. grafts..	80.00	750.00
500 10 in. grafts two years in field.....	300.00	

FIRS

Silver (Concolor)		
1000 8 to 12 in. XX...	$25.00	$200.00
1000 15 to 18 in. XX...	50.00	400.00
Douglas		
1500 12 to 18 in XX...	40.00	350.00
2000 18 to 24 in. XX...	60.00	500.00

HEMLOCK

(Tsuga Canadensis)

45000 4 to 8 in. X....	10.00	60.00
3750 10 to 15 in. XX..	50.00	395.00

HEMLOCK

(Tsuga Canadensis)

There is an opportunity to purchase in quantity this superb conifer for mass planting, reforestation, etc., at prices somewhat approximating commoner evergreens. Our seed beds of 1926 and 1927 were very successful. Almost twice the expected number of seedlings survived. They have since been transplanted in the nursery and are now 4 to 8 inches in height, with a good root system. We offer these at

$60 per THOUSAND

The variety grows into a large, graceful specimen, much in demand by landscape architects for natural effects. It stands shearing very well and will make perhaps the best sheared evergreen hedge in all nature. One of the few evergreens that will thrive in dense shade.

Kelsey's Short Guide

is now ready for distribution. The best varieties of Evergreens, Trees, Shrubs, etc., in concise form, priced and described. There are thirty photographs in natural color. Also Kelsey prices—bargains in many varieties unequaled elsewhere, when quality is considered. Copy free if you ask for it.

RED PINE

(Pinus Resinosa)

Again this year we offer large transplants in this popular variety for mass planting. By far the best native Pine for all-round purposes. We have specialized in the 12 to 18 inch size, nursery-grown transplanted, and have been able, due to quantity demand, to reduce the price to

$80 per THOUSAND

At maturity, the tree is broad headed and dense, a splendid specimen. It thrives in gravel soil or better. Its chief present attraction is immunity to disease. No known pest will occasion serious damage, under normal conditions.

NEW CHINESE ELM

(Ulmus pumila)

An extremely fast-growing variety introduced by Dr. Wilson. From Texas to Maine and the Pacific Coast come golden tales of its hardiness, resistance to extreme of temperature, and extremely rapid growth. The best of it is, they are mainly true. Chinese Elms should not be planted in heavy, wet soils. But we know of five hundred thriving on the tip of Cape Cod, with salt spray flying over them during stormy weather.

	(100)	(1000)
12 to 18 inches.....	$8.00	$50.00
6 to 8 feet XX ($25 per ten)	200.00	

KELSEY NURSERY SERVICE

50 Church Street — **New York City**

AMERICAN FORESTS

Vol. 36 APRIL, 1930 No. 4

The Drive Is Coming Down

By Stewart H. Holbrook

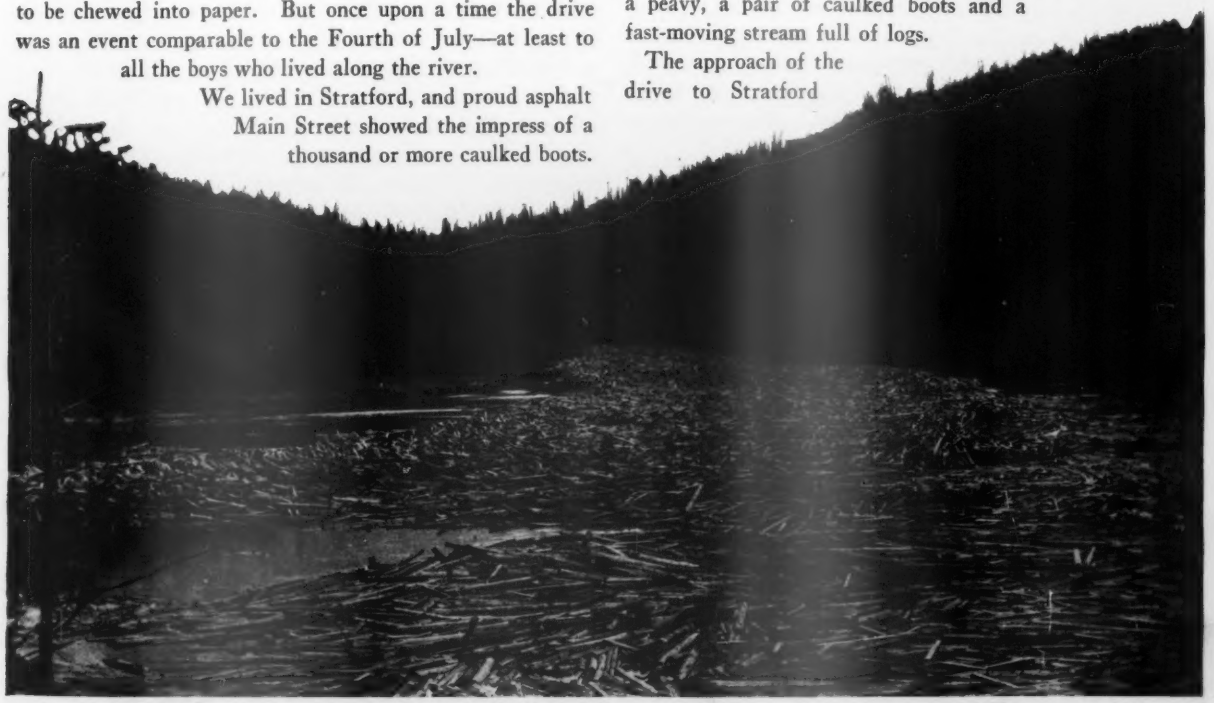
ONE night in late April you heard it. You sat upright on your straw-tick and you heard a great booming sound; a great, hollow booming like far-off thunder. But you knew it was the rumbling voices of the Great Gods of Up-River that you heard, the drumming of long logs in the swollen, angry stream. Along toward daylight the rolling became a monstrous roar; and you could stay in bed no longer. You threw off the heavy quilt and went to the window; and you saw what every boy waited to see in April—the rushing, churning Connecticut River filled with spruce and fir. Yes, the drive was a-comin' down!

All of this, of course, was thirty years ago, for today there are no log drives in New England worthy of name; only the paltry pulp drives are left, short, small logs destined to be chewed into paper. But once upon a time the drive was an event comparable to the Fourth of July—at least to all the boys who lived along the river.

We lived in Stratford, and proud asphalt Main Street showed the impress of a thousand or more caulked boots. The board walks of the side streets were deeply holed by river-men's shoes, too, and splintered as well. For Stratford was one of the best known of the river towns and the drivers always "wanganged" there for a day or so on their way down to—somewhere. We boys never knew where the drive came from nor where it went. It came from a vague "Up-River" and it disappeared round the bend to an even more vague "Down-River."

None of the boys in our town wanted to be cowboys, or policemen. To be a riverman and go down with the drive was the ambition of all of us. To "card" logs through white water and green, to steer a bateau through the Fifteen-Mile Falls, to break the jams that were always happening—these things were the greatest of all. To pilot an engine on the Grand Trunk was as nothing; we wanted a peavy, a pair of caulked boots and a fast-moving stream full of logs.

The approach of the drive to Stratford



Soon the logs began coming thicker and thicker—the river became a mass of sluggish bodies. Down at the bend a few rivermen were stationed to "pole out" and avoid a jam—and on and on came the miles of logs.

was heralded by various signs, all of them sure and invariable. First were the drums of the logs themselves, up-river, the booming that made your heart beat faster. Then the advance guard—slim, easy-riding logs that somehow had managed to break away and get many miles ahead. These were graceful fellows, moving easily and swiftly in the broad river, seemingly restless to meet their fate at some sawmill down-river. They were fastidious logs, running away from the crowding their more laggard fellows would meet when the jams happened.

Another sign was when the boss of the drive, a most important fellow in all of the river towns, drove down Main Street with a team of the company's fastest horses. The horses were black as midnight—as black as the bushy eyebrows of the boss—but they were no blacker than the long cigar the boss chewed. The boss had a man to drive for him, too, and wherever they went they drove very fast. In the spring the boss came to arrange for "wangan" ground just outside the village.

The positive sign that the drive was imminent was when the town policeman went fishing. All winter long he had been most officious, wearing his star on his outside coat, driving us boys from the pool hall, arresting drunken old Joel Brown regularly each Saturday night, and standing guard at the Grange dances. But one day in late April he said he was going fishing, and he did—at least he disappeared. Then we knew that the drive would be along on the morrow.

Soon the logs began coming thicker and thicker until you could hardly see water between them. The river became a mass of sluggish bodies, rolling this way and that, grumbling all day long and all night. No door nor window could shut out the noise. And who wanted to shut out such a noise!

Down at the bend a few rivermen were stationed, tending out, poling the logs from the "off" bank, lest they be halted in the eddy and so make a jam. And on and on came the miles of logs.

Rumors traveled fast among the boys when the drive came down, and we never failed to know when the "wangan" train, huge wagons hauled by four, six and eight horses each, was due. Mary Ann they called it, a regular circus affair, with long blue bodies, the company's initials painted on their sides and the harnesses trimmed with bright brass and bedecked with gaudy tassels. Such a clanking they made and how grand they looked in the sun. We were there to greet them as they rolled into Main Street.

Then there was a mighty bustle and stir as the tents were pitched and the stoves set up. We were on hand to help them if they would let us. We lugged water and wood, and we took the hames from the great, gallant horses. Soon there was the aroma of cooking in the air, and smoke, too, that made your eyes water.

These cooks of the drive were generous fellows, all of them. It might be Joe Bullie or it might be Pat Ryan; but whoever he was he fed us on tin plates with beans from out the bean-hole in the ground, and he loaded us down with gigantic cookies that were marvels of size and goodness. The like of these cookies was never seen anywhere but on the drive; they were as large around as small plates and they were as thick as three ordinary cookies.

On the night that the drive hit town there was a great to-do after supper. The small village with its one main street, so quiet most of the time, suddenly surged with life as two hundred or more river-hogs milled up and down. They wore gaily colored shirts, many of them, and yellow greasers with red flannel collars. They wore their caulked boots also, and made havoc of the floors of the three saloons.

Here was a notable company; ragged, wind-tanned men who had cut the forest back in the hills, sawed it up into logs, brought it down ice-hard roads on creaking sleds and now were driving it down, on and on—down-river. They worked hard and they played hard—so the policeman went fishing.

The "nice people" of our town stayed at home this night; or at least the women did, though any woman was as safe on the street when the drive hit town as at any other time, possibly more so. The rivermen were rough fellows, it is true, but they were given to minding their own business.

We boys must be down town to see the sights and to hear the revelry. We could not go into the barrooms, but there was plenty to see on the streets. We watched big Arthur O'Leary as he carefully and methodically threw six brawny rivermen, one after the other, from his saloon into the middle of the street, telling them that when they decided to become "gents" they might return. And he said all this in a very mild voice! O'Leary was hard, but this was the drive, you understand, and rivermen are rivermen.

By the bridge that crossed the river we saw a really good fight—some ten or more drivers engaged in battle. There had been no argument or bad feeling; they were fighting because of the joy of being alive and going down with the drive.

There was the great hubbub of noise. Alcoholic shouts and laughter, the stomping of hard boots, the plunking of slot-machines, the rattle of beer bottles, and the tin-panny music of the new electric piano at O'Leary's. And underneath all the steady bass of the muttering, grumbling logs going by in the night. By midnight the town had become quiet; four o'clock in the morning comes quickly, and the drive must go on.

Next morning when we went to school we saw that the logs were moving more slowly. At our desks we fidgeted, because we couldn't see the river from the schoolhouse. Yet we knew what was happening, for we were kids of the river, and the rumble of the logs had almost died away.

At noon we did not stop for dinner. We rushed down to the bridge. There, with our own eyes we saw it—the river piled high with logs. A jam! Stretching for a mile downstream was the huge hulk of logs, crossed like so many jackstraws; long spruces were up-ended, their dripping bodies standing straight out of the mass. Now a creaking and groaning as the water ground the logs together. The river backing up fast, and 'way down below we could see small figures on the logs and the bank, working feverishly. Now and again the great mass would seem to give a long sigh.

There was no keeping us in school this day; all on the river knew that, even the teacher. So there was a rush down to the bend.

Below the jam the river was but a trickle. They'd have to work fast, we thought, or soon the water would be backing up into the village. And they *were* working. How breathlessly we watched as they danced like cats to and fro across the barrier, looking for the king-log, the log that must be moved before the jam would give way. The clanking of peavies, the cursing to high heaven, the shouts and the orders, the tearing at this log and that. And over all the ominous feeling of present danger. We talked in whispers.

There came a cry of warning. Slim Pete Hurd, one of our rivermen heroes, had "got holt on the king-log." We could see him twist it from its fellows and roll it down. Then we saw a quaking and shifting of the huge mass as the drivers ran for the shore, balancing themselves with their peavies on the struggling logs. Not all of them made the shore, for the mile of pent-up river and logs, angry at delay, would not wait for mere rivermen. The jam broke with a rush of tossing logs and water, and some of the men had to "ride it out," with Death riding very near to them.

From the bank, our eyes wide and our bodies trembling, we tried to watch all of the leaping and running men. Spray flew high in the air and wet us; and the logs were tossed about as though they had been matches. Such a roar and such a churning!

Through the thunder of the mad logs we heard a cry: "Pete's gone!" And, looking down the stream a little way, where the crest of the flood was rolling, we saw a slim body thrown high in the air and fall again—into the hell of grinding logs and white water.

On the way back to the village we did not talk a great deal—there were lumps in our throats that prevented talking. When we got to the bridge we noticed that the logs were now moving freely and swiftly; but we didn't stop to watch them.

Over on the camp lot there were no cheery "wangan" fires of the rivermen, and none of the brave white tents. Near the bend of the river, where the jam had been, you could barely see three or four stray logs floating idly along. The river rumbled no more, only swished and gurgled, muddy-black water. The village, too, was quiet. There was no fancy piano playing, and no fighting, and no "hurrah" along Main Street.

The logs passed out of sight around the bend. The drive had gone down.

Long spruces were up-ended—their dripping bodies standing straight out of the mass. Now a creaking and groaning as the water ground the logs together.

The Four Florists

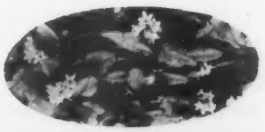
As low-hung clouds go swiftly scudding by,
March grabs from each a little tuft of gray;
Then hastening, all along the river bank,
She casts the downy pussy-willow spray.

Now fickle April, roaming o'er the hills,
Steals pink from every rainbow showers bring,
And hides beneath October's rug of leaves
Arbutus, fragrant queen of spring.

The stars, that twinkle in the midnight sky,
No more aloft are seen at dawn.
For May-time plucks them from the blue—
And scatters dandelions upon the lawn.

With lavish hand from her fair smiling skies—
Though roses are June's bridal dot—
She gathers blue, 'twixt all the fleecy clouds,
And leaves to us the shy forget-me-not.

By *John Phelps.*



Photograph by United States Army Air Corps

Aerial Age Opens a New Era in Forest Protection

IN San Francisco, late one October evening in 1920, an ardent and somewhat visionary young officer wrote finis to his report to the Chief of the United States Army Air Corps with the startling prophecy that "the day will come when large numbers of men and equipment will be carried by airship to the scene of a forest fire, both men and equipment dropped by parachute, while the airship will rain down fire-extinguishing chemicals from above."

These conclusions, no doubt, resulted from an overdose of youth and faith in the ingenuity of America's aeronautical engineers and chemists. But they were not wholly without foundation. This young officer had in three dry months directed the thirty-seven airplanes which made up the aerial forest fire patrol in California and Oregon over 16,332,990 square miles of dense forests. He had witnessed his fire-fighting planes roar out daily and fly 3,996 hours over a distance of 476,085 miles without the loss of a single life. Too, his pilots and observers had discovered 1,632 forest fires, 818 of which they reported in advance of ground detection agencies.

Considering this, there was little wonder that the enthusiastic young flying officer closed his report of the 1920 aerial forest fire patrol which was detailed by the War Department to assist the Forest Service in the fire control work on the National Forests, with a prophecy that appeared at first glance to offer permanent relief for the fire-weary foresters.

But, unfortunately, only the eyes of the young officer and his fellow airmen saw this fireless vision; the foresters could not, or did not, get the first glimmer of it. As a result, Colonel W. E. Gilmore, in command of the patrol the following year, advised in his report that there appeared to be an attitude of criticism against, if not actual opposition to, this activity on the part of many field officers of the Forest Service, due in part to objections which, as a rule, follow in the wake of innovations along any line of accomplishment—the tendency to cling with jealous tenacity to the old established order of things.

Without a doubt, this negative, or apathetic attitude toward the fire-fighting plane resulted from lack of familiarity on the part of the foresters with its value and work. The huge question mark that was plainly visible in their minds, in most cases, vanished when contact was made with the airmen and their roaring, plunging sky ships. But the fact remains that the following year, 1922, the War Department withdrew its active support and since that time the airplane has been a very distant adjunct of the ground forces.

Yet in spite of this attitude on the part of the foresters, the significance of the fire-fighting plane is very real to those regions which have experienced its benefits, and to the men who made it possible. These men, as well as the regions benefited, know that the airplane is an agency by means of which the virtual sacrifice of vast stands of timber, together with the drastic financial losses resulting therefrom, may be averted. While they are tremendously valuable for reconnaissance purposes once a fire has gained sufficient headway to necessitate the organization of a fire-fighting force for its suppression, their greatest value lies in the fact that they

provide an unparalleled means for the discovery of fires. The aerial observer, by the very reason of his position, is not only able to discover in their incipiency fires in the open country, but is also able to detect in obscure places small fires which, due to their location, could not possibly be visible to the ground lookout until they had reached sufficient proportions to represent a genuine menace. Too, the psychological or moral value of the airplane on campers, hunters, fishermen, stockmen and others whose carelessness or wilfulness in disregarding laws is responsible for such a large number of fires, is worthy of consideration. With special patrols hovering over the forests, seeking the first curl of smoke and its probable cause, the general public is satisfied that nothing is being left undone for forest fire-prevention and protection.

United States Forest Service

The aerial observer, by the very reason of his position, is not only able to discover in their incipiency fires in the open country, but is able to detect in obscure places fires which, due to their location, could not possibly be visible to the ground lookout until they reached sufficient proportions to represent a genuine menace, and cause perhaps a tremendous loss.

But the forester of the future will not confine his aerial campaigning to the detection and control of forest fires. Sky dusting insect infested areas in a chemical warfare on these silent destroyers of trees will logically follow; indeed, enterprising private forest landowners have already found the plane practical and profitable in this service. Aerial photography will simplify forest surveys and timber cruising. In the undeveloped field of forest recreation the opportunities are startling, so limitless are they.

Photograph by Royal Canadian Air Force

Canada is fortunate in having a system of lakes that serve as landing places, thus eliminating the necessity of developing forest airports and emergency landing fields. But the Dominion has proved conclusively that the airplane is the heart of its forest-protection plan.

Census of big game animals will be accurately and quickly taken during the late

Photograph by Royal Canadian Air Force

One of the great Vickers Viking amphibian planes used by Canada in sky mapping her great northern forests.

summer and early spring months, and the problem of a shortage of food during the bleak winter period will be handily solved by dropping compressed food from the low-flying plane. Fish for restocking purposes will be transported through the air to the headwaters of mountain streams, and game law enforcement will be furthered and rendered more effective by the sky ranger of tomorrow.

The fact that in 1920 there was no more hazardous flying performed anywhere in the United States than on aerial forest fire patrol need no longer be a consideration. Physical and nervous forces need no longer be tremendously taxed by flying from two to five hours daily over rough mountainous country, the character of which meant certain loss of plane and probable loss of life in case of a forced landing. All of this has been remedied. Planes that will virtually fly themselves are now droning through the sky, propelled by motors of greater power and endurance. Air routes have been mapped reducing the dangers of uncharted skies; special weather reports have eliminated to a great extent the uncertainty of flying conditions. Airports, radio beacons, parachutes, turn and bank indicators and landing altimeters, have all been developed for the safety of the airmen.

Permanent forest airports will be the nerve center of the foresters' aerial plan. Supplementing these will be emergency landing fields, located with respect to timber values, management, topography and fire hazards. That is, a stand of timber of great merchantable value, or one exposed to unusual fire hazards, will be guarded by a number of emergency fields at strategic points so that firefighters and equipment can be transported by plane and rushed to the scene of a fire at the greatest possible speed. Areas invaded by insects and areas being cruised will be controlled in the same manner. The airports will be designed for the permanent administration and management of the forest areas.

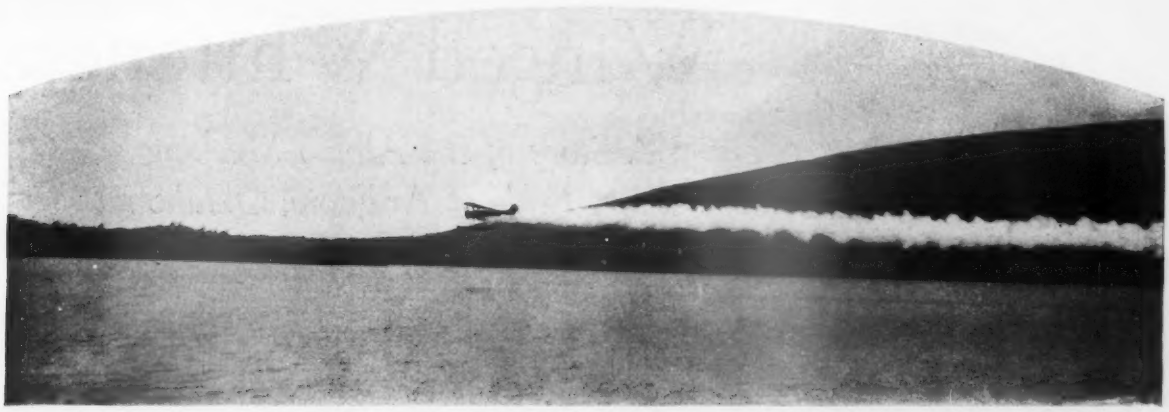
With an adequate system of airports and emergency landing fields the forest's enemies can be in a measure bottled up by the strategic use of two types of planes—the small, powerful, fast-climbing patrol plane and the sturdy transport ship. The patrol plane will serve for fire detection and reconnaissance over large fires, for sky dusting insect infested areas, and general administrative work where speed is essential. The heavy transports will carry men and equipment to the emergency field nearest the scene of fires and will transport thousands of pounds of fish for restocking purposes and winter food for big game animals.

It is not difficult to picture the dramatic activity in the forests when the droning fire-fighting ships of the future go into action. One can easily sense the uncertainty of a still, dry sunrise in August when treacherous electric storms ride the upper air currents. One can almost thrill as the mind-picture is drawn of the swift patrol planes taking off from the airports on patrol duty over the danger zones, while the great transports are rolled out and primed for action. One can see the nervous, but well organized, activity when the word comes by radio phone from the winged scouts that the red enemy has struck. We see the huge transports, loaded with men and equipment, roll into the wind and point towards the emergency landing field nearest the fire. We see the hawk-like patrol planes riding the smoke clouds as they curl skyward, or slipping low into a canyon to measure the action of the blaze.

It has been argued that the cost of flying—especially the development of airports and emergency landing fields—pro-

Photograph by Royal Canadian Air Force

Oblique aerial photograph of Moose Island, in Lake Winnipeg, Manitoba, Canada, with various timber areas outlined.



Flying in the calm of the morning, the foresters of Canada have turned their "puffer" machine with its deadly poison on the destructive hemlock looper, caterpillar and budworm with remarkable success.

hibits the use of airplanes in such numbers as to be really effective. Such arguments, however, are absurd, for a nation whose forest wealth has been drained by carelessness and whimsical indulgence cannot gamble with its remaining timber stands for the sake of saving a few dollars. Furthermore, it is no idle exaggeration to say that if an adequate system of airplane patrol were put into operation and was instrumental in preventing one single large fire, it would reimburse the nation for the aggregate cost of all aerial operations during the season, out of the money saved in timber conservation. Too, the cost of maintaining an adequate fleet of fire-fighting planes and airports would be greatly reduced by the use of the plane in other phases of forest work.

Canada is fully aware of the wonderful possibilities the airplane offers in developing the forestry movement, and in Ontario has created what has been termed the "finest forest fire-fighting service in the world." In this region there are 125,000,000 acres of timberland to be patrolled and 100,000,000 acres are guarded entirely from the air. Their remarkable efficiency and effectiveness has attracted the attention of the civilized world.

While American foresters were busy frowning upon the broad use of the plane on the Pacific Coast in 1920, Canada was embarking upon aerial plans that were to play an important part in cutting down fire losses in the Dominion, increasing the knowledge of forest resources and improving methods of forest utilization. The first nation to make use of the airplane and aerial photography in forestry work both for protective and other purposes, the Dominion has continued to hold its lead.

Like the government, the Province of Ontario maintains its own air service as part of its forest branch, and although organized only in 1924, it now owns and operates twenty-five planes. This forest patrol fleet is controlled from the main base at Sault Ste. Marie, which is said to have one of the best equipped hangars on the continent. Each plane, fitted with wireless phones by which reliable voice communi-

(*Continuing on page* 230)

The fact that in 1920 there was no more hazardous flying performed anywhere than on aerial forest patrol need no longer be considered. The old Army De Haviland 4 (left)—the "flaming coffin" of the forest airmen—has given way to the modern plane (above), propelled by a motor of greater power and endurance. Too, airports, radio beacons, parachutes and weather reports have all been developed for the safety of the airman.

Winged Whiteness

A Story of the Albino Mocking Birds of Ardmore, Oklahoma

By Rachel M. Hutchinson

(*Photographs by the Author*)

The white mocking bird at her bath.

EVERY true student of nature sees strange things, but few have encountered anything so rare as four white mocking birds in one season. Albino crows and robins are not uncommon but the white mocking birds of Ardmore, Oklahoma, are the only ones I ever knew existed. I have been told that there were some in the Ardmore cemetery a year or two previous to the presence of my three, which were hatched in one nest, although in separate broods, but I did not see them or even hear of them until after the experiences with mine.

In a lifetime of loving birds, building houses for some, putting out nesting materials for all, weeks of study of the same ones in the same location, sometimes for more than a year, and the raising of three broods of young in one summer, I have gained intimate information about some of our song birds. I have pictures to show how readily they respond to kindness and a store of anecdotes that, lacking photographic proof, I relate only when I know my listeners are sympathetic.

Even with photographs before me I, myself, almost doubt my experiences with the white mocking birds—particularly with one I always think of as *my* little albino, "Ally," for short, an adorable feathered friend, and *mine* because people speak of her that way and because she really seemed to belong to me, although I never had her in a cage or in the house.

Friends, knowing of our interest in birds, told us of the first white mocker. I telephoned the man upon whose premises it was hatched and, while he was willing to talk to me about it, he seemed most unwilling to allow me to see it. When I called him again later, he said it had not been seen for some time; that it had remained for about a month, then vanished. Boys in the neighborhood had guns and sling shots, but whether they shot the bird or it simply left, he did not know.

Simultaneously with our knowledge of this bird we discovered the first one of our group of three. In the garden, at the foot of our baby's grave, a small cedar tree is growing. In this tree, an ordinary-looking, gray mocking bird built her nest about two feet from the ground and deposited four eggs. From the first we knew the nest was there, but we were careful to avoid directing attention to it, so we were at first unaware of its strange inhabitant. Then one evening we found the young birds out of the nest, and discovered to our surprise, that one was pure white, with ivory-colored bill and feet. It was extremely timid and we were never able to band or photograph it.

We watched it, however, its immediate family and the nest, so we knew when the mother bird returned and when there were four more eggs. No difference was apparent in the eggs, but from the moment the three wee birds were hatched it was easily seen that two of them were albinos. Their flesh was pink with a decided tinge of orange, their fuzzy down snow-white. Pictures taken at this period were not a success, as the nest was on the northwest side of the tree and only a limited time was available for exposures late in the afternoon.

We banded the young when they left the nest, July 19, and photographed them. To our intense dissatisfaction we were unsuccessful in our attempts to get good pictures of all the family together, but we are thankful for the ones we did acquire then and later.

We saw the birds in the cemetery frequently until August 4. Two of these, the first little timid one and one of the "twins" seemed to have been but "ships that pass" for they sailed away on snowy pinions and were seen no more. There were rumors of a white bird in a part of the town near the cemetery, but neither the bird nor the source of the rumors could be located.

Albino Twins.

In this materialistic world of ours we are too apt to see only the marvelous results that human brains and hands accomplish, keeping our eyes closed to the natural

wonders around us. We need something extraordinary to attract and hold our attention. These white mocking birds seem to have been unusual enough to arouse even the most blasé, while the story of "Ally" is a fascinating one.

The cemetery is more than three miles from our home, so on August 30, almost four weeks after seeing them there the last time, imagine my amazement when I saw a white mocking bird at a bath in our yard and saw, too, that it was wearing a band. The number on the band proved beyond doubt that it was one of ours but Ally and I never needed this confirmation.

A few days after Ally came to our home I was in the yard where she appeared on a long branch of a grapevine that was to be her favorite perch for months. Seeing her there the first time I was so delighted that I spoke before I thought that my voice might frighten her, but to my astonishment she came nearer, and, as I continued to talk, she continued to approach until she was on a low limb of a tree less than six feet from my head. Then and there began a recognized friendship—recognized on my part, I mean, for I think Ally knew we were friends before I did. Interested listeners have often said: "Oh, I know it followed you home!" And while I think that was not the case, I like to believe that she stayed because of me.

I shall never forget the first time I wished Ally to demonstrate the manner in which she approached and "talked" to me. It was a morning soon after she came to our home and I had gone to the garage with my husband as he started for his office. We saw Ally on the grape arbor and I spoke to her. She waited until I was through talking, as though she were listening and understood, then answered me. We did this several times and she came nearer each time, showing she did not just happen to do it, but that she seemed to do it deliberately. In all of our "talks," no matter how many times repeated, if my part ended with a question, a rising inflection in my voice, she answered, and if we were undisturbed I had to be the one to conclude our conversation, for she seemed to enjoy it as much as I did and had more leisure to indulge in it.

Very soon after she came she called to me first if I was outside and failed to see and to speak to her immediately, and if a cat or butcher bird entered the yard she called to me even if I was in the house, and, of course, I responded by driving away the intruder.

Ally stayed with us all winter. She visited the feeding-table many times daily where diced apples and grapes were nearly always on tap and, when the supply was temporarily exhausted, proclaimed the fact in a very decided way. There was a marked difference between this food shortage call and the trouble call.

Special occasions arose when I wished Ally to exhibit the sweet little talks or some of the other bewitching evidences of friendship. Some of these were more exciting than others but were never failures. On one occasion a friend spent the afternoon with me and Ally and the other birds had furnished an entertaining program. At dusk, as the friend was leaving, she said: "I wish I might see the little white bird once more." We turned towards the grapevine and I called. In answer to my second call, a chuckly, gurgly bit of music came from the hedge close behind us, which sounded exactly as though Ally laughed because we were looking in the wrong direction.

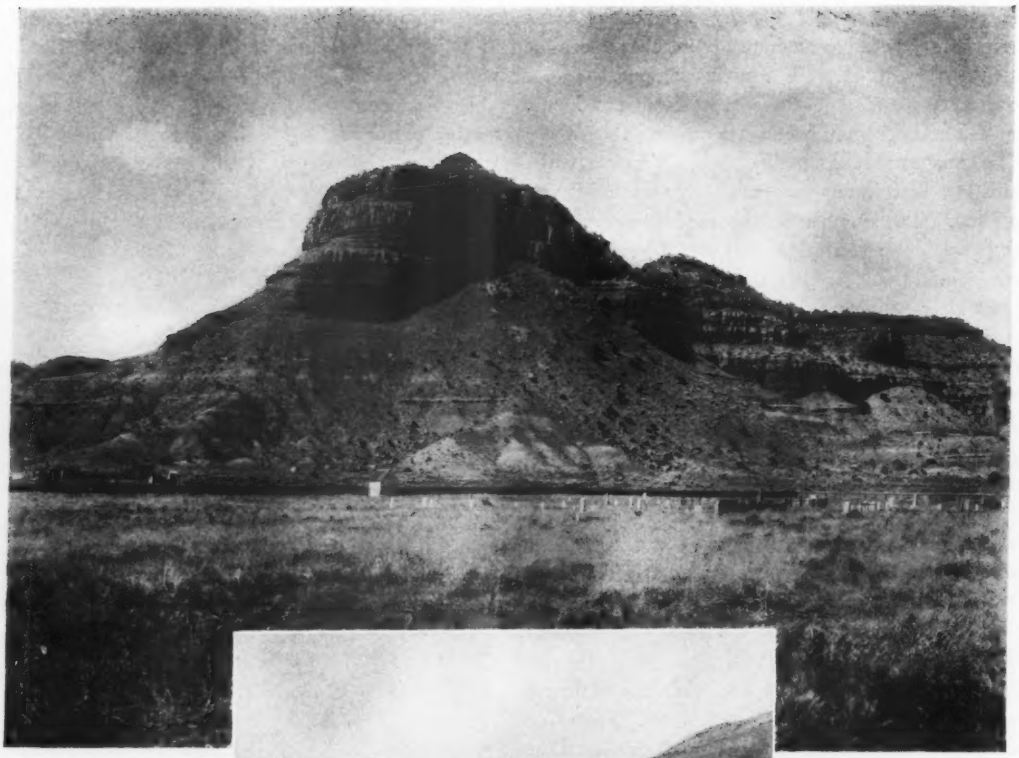
In September the fledgling plumage was shed, but the mature plumage was the same flawless white. In January, when Ally was six months old, the color of her eyes changed from their original grayish-blue, to a pale yellow, somewhat darker than her ivory-colored bill and feet.

Queen of the garden, Ally would not tolerate other birds at her dinner table,—excepting only a male cardinal.

Ally was not the versatile musician that some of the more sober-clad mockers are. Twice, I think, I heard her practicing singing. Perhaps I was mistaken or she became disgusted with the results obtained and desisted. I only know, positively, of the few short, musical phrases she used to answer my call and my questions; the "here I am" call to me, the somewhat less musical "talking" she did when rations were scarce, and the alarmed or scolding notes heralding an intruder.

Through the winter Ally did not tolerate another mocking bird in her territory, or any other bird on the table when she was eating, except a male cardinal. Apparently the regard was mutual as Ally was the only one allowed to eat with him. They were together constantly; if one appeared the other was almost certain to be near-by.

Finally spring came and with it an event that caused sadness in more than one home. On a dark rainy morning the little white mocking bird met her fate in a trap a neighbor had set for rats.



Above: Islands in the Plains. Up from the plains in Utah protrude the Red Ledges, at Kanab—their high surfaces dramatic evidence of what was once the level of the land.

Below: The Waters at Work. A striking picture of erosion in Otero County, New Mexico. This creek years ago ran on top of this area, with lovely, grassy meadows stretching away on either side.

Soil Erosion in the West

By Arthur E. Morgan

THE traveler to California in going through New Mexico and Arizona sees buttes or table-lands scattered over the plains. These buttes are bits of plains with fairly level surface, set high in the air, surrounded by cliffs. A butte is a reminder of a time when it was part of a great plain, on the same level as itself.

Little by little the rivers and smaller streams wandered back and forth over the plain, caving their banks and bringing the entire region to a lower level. Here and there some island which by chance was not cut away by the streams, stands out on the plains at the former level. To see them there hundreds of feet above the general surface, gives an impression of the vast work the rivers have done in cutting down and carrying away all the rock and soil between the old level and the present surface.

One is inclined to breathe a sigh of relief that this enormous job of transportation was over with before man appeared on the scene. Otherwise his farms and his cities would be due to tumble into the rivers and find their slow way to the sea. But no such sense of relief is justified, for just as in the past the high plains were cut down to lower levels by the action of water, so today, even in the semiarid regions, this same process is still at work. Each freshet results in caving banks and muddy streams. One result is the filling up of the great irrigation reservoirs recently built at great expense by the National Government. For instance, the Elephant Butte Reservoir in New Mexico receives enough silt each year to cover thirty square miles a foot deep. Before many years such a large part of the reservoir capacity will be filled with earth that there will not be storage space available to supply water to the lands below. The Zuni Reservoir in New Mexico, built in 1906 to store water for irrigation, has been filled with silt to seventy-five per cent of its total capacity. A reservoir completed at Austin, Texas, in 1913, which had a capacity equal to 50,000 acres one foot deep, has been completely filled with silt. Sometimes after a heavy rainstorm the water in these streams is so loaded with silt that half as much dirt as water may be flowing down the channel, though such cases are extreme.

Looking at the vast areas which pour water and mud into the main streams, one is inclined to throw up his hands in despair, and to feel that these forces of nature are beyond the control of man.

The questions come to one repeatedly, have men done anything to hasten this tearing down of the great plains, and, can they do anything to slow up or control that process so as to make settlement more tolerable and human occupation more enduring?

Answering the first question, human occupation *is* responsible for a very great speeding up of soil erosion. Before the Forty-Niners went West, most of the semiarid plains were covered with grass. Water flowing over the surface was divided in its flow, and found no defined channels until it reached creeks or rivers. Grazing buffaloes devoured the grass and made trails across the plains, but they were migratory, and the grass recovered from their tramping.

With the coming of men there were two influences which tended to concentrate the surface flow. The pasturing of cattle or sheep overgrazed much of the land, and left it unable to withstand soil washing, while the cow-paths started streams which soon became deep gullies.

In the second place, wherever men made wagon trails with the slope of the country the wheel ruts soon widened and deepened into gullies. In a thousand cases throughout the West what were old wagon roads are now channels ten to twenty feet deep and thirty to fifty feet wide. As these channels develop, smaller gullies branch off from them and in turn become deep and wide. After a number of years a territory may be so cut up by these channels as to look like a leaf with branching veins running off from the main rib.

In these semiarid regions the soil often is ten to thirty feet deep. After a heavy rain the banks of these gullies cave into the stream. The slope usually is much greater than on the plains of our middle states. So a muddy torrent rushes down, adding to its load of silt until it is choked full and can carry no more. As these muddy torrents reach the main rivers with their flatter slopes, much of the silt is dropped by the way, and sometimes the river builds up a dyke on which

Soil erosion, hastened by what man has done and left undone in his conquest of the West, is one of the most sinister aspects of land abuse. The author of this article, the fifth of a series dealing with problems of the public domain, is President of Antioch College, an eminent engineer of high standing, and a man who has dealt first hand with many large problems of water control.

It will be recalled that following the 1913 flood in Ohio, Dr. Morgan was chosen as Chief Engineer of the Miami Conservancy District, and given the responsibility of preventing a recurrence of the Dayton flood. This is only one of Dr. Morgan's water problems. He has planned and superintended the construction of no less than seventy-five water control projects in this country.

Here he tells in clear language how soil washing in the West has "dug in" and intrenched itself, particularly on the public domain. To him the situation represents a new order of mastery by man of his earth and calls for all the daring and invention which in the past has been expended in the conquest of his fellow men.—Editor.

it flows. In this way the Colorado River through the ages has built itself up more than a hundred feet above the Salton Sink. The coming of man has greatly speeded up this process in many localities.

As the gullies are formed, the water which formerly soaked into the soil and resulted in a rich growth of grasses, now runs off the land and leaves it more desertlike, and still less able to resist erosion. On the Puerco River, in New Mexico, are remains of populous Pueblo Indian villages with evidence of teeming life, where now the river flows through a barren region, with vertical walls of rich earth thirty feet deep. During every freshet these walls of earth cave into the stream until the water is so muddy it can carry no more. Before this channel was started the occasional flood-waters spread over the plain, and were followed by a burst of vegetation which when in bloom made the landscape as brilliant a scene as the eye ever viewed. In these semiarid regions rain falls seldom, but when it does come, it is in torrents. Sometimes half the year's rain will fall in a day.

Quite probably many Indian communities disappeared as a result of the gullying of some stream and the loss of the surface water. Before the coming of the white man conditions were bad enough; since his arrival they are much worse.

We now come to the second question, what can be done about it? Is it possible to check the course of nature, and to slow down this age-old process of erosion so that man can occupy the earth with greater comfort and security?

The writer believes it is possible, though each year of delay adds to the difficulty. To build dams in rivers, or to dig silt out of channels or from irrigation ditches, or to build new irrigation reservoirs to take the place of those destroyed by silt—all these are but temporary expedients. To get lasting results we must attack the trouble at its source. I believe it is feasible to control a stream by building small dams across the heads of small gullies over the watershed, and larger dams across the larger branches, and by planting suitable shrubs or trees in the stream beds, which are dry nine-tenths of the time—and in the smaller gullies.

Perhaps the best tree for this purpose in the Southwest is the desert tamarisk or "salt cedar." This tree has the unusual quality of standing extreme drought and also extreme wetness. One sees these trees hale and hearty on the arid plains about Mexican adobes, where they get no irrigation water, and where the rainfall is only ten inches a year. One finds them also in the shallow parts of reservoirs, where their roots are under water for months at a time. If a tamarisk becomes half buried in mud it sends out new roots along its trunk, and starts a fresh growth from the top.

Planted in the bed of an intermittent stream or above a dam, these trees, which look like red cedars, slow up the flow of the muddy water and cause the mud to drop. As the mud gathers around their roots they grow very rapidly, several feet in a year, and form a new top to again be a filter on a higher level.

We commonly think of the silt in our rivers as coming from all parts of the watershed. As a matter of fact, a few areas often supply a large part of the silt burdens carried by a river. The Mississippi probably gets three quarters of its silt—not counting caving banks—from not over five per cent of its drainage area. Of the enormous burden of silt which each year pours into the Elephant Butte Reservoir through the Rio Grande, nearly half comes from the Puerco River, which is but about twenty per cent of the entire watershed of the Rio Grande.

The writer believes that a few million dollars might effectively control the 5,000 square miles of the Puerco watershed, thus adding perhaps a century to the life of the Elephant Butte Reservoir and the very fertile irrigated region below, and at the same time turning the barren plains along the Puerco into rich pasture.

Such undertakings as these represent a new order of mastery by man of his earth, but they can be achieved, and in achieving this victory over wayward nature, man will have a chance to use all the daring and invention which in the past has been expended in the conquest of his fellowmen. A real antagonist of mankind is there—not waiting idly for the attack, but "digging in" and entrenching himself.

Most of this caving land is Public Domain, and a proper field for government effort. It will not wait until a convenient time, but becomes more difficult of mastery each year.

The "National Forest" Number

To picture the true part the National Forests play in the life of America and to present their highly interesting and dramatic history, the July issue of American Forests and Forest Life is to be devoted exclusively to the National Forests. This special issue, bigger and more beautifully illustrated, will bring to you National Forest history by the men who made it, and will present their purposes by the men directing them.

Outstanding among the articles to appear in this issue are: "Your National Forests," by Arthur M. Hyde, Secretary of Agriculture; "The National Forests Today," by R. Y. Stuart, Chief of the United States Forest Service; "The Story of the Forest Ranges," by Will Barnes; "The Search for Forest Facts," by Raphael Zon; "An Evaluation of Wild Life as a Forest Resource," by Aldo Leopold; "How the National Forests Water the West," by E. N. Munns; "When Forests Were Young," by E. T. Allen; "The War on Fire," by Fred Morrell, and "Forest Recreation Comes of Age," by L. F. Kneipp. There will be many others dealing dramatically with the highlights of National Forest history, fishing, hunting, camping and the more technical phases of forest administration.

Acquaint yourself with the National Forests. These great areas, remnants of one of the most enchanted wildernesses the world has ever known, and stretching from the Atlantic coastal plain to the Redwood fringed waters of the Pacific, represent one of the most picturesque chapters of America's development.

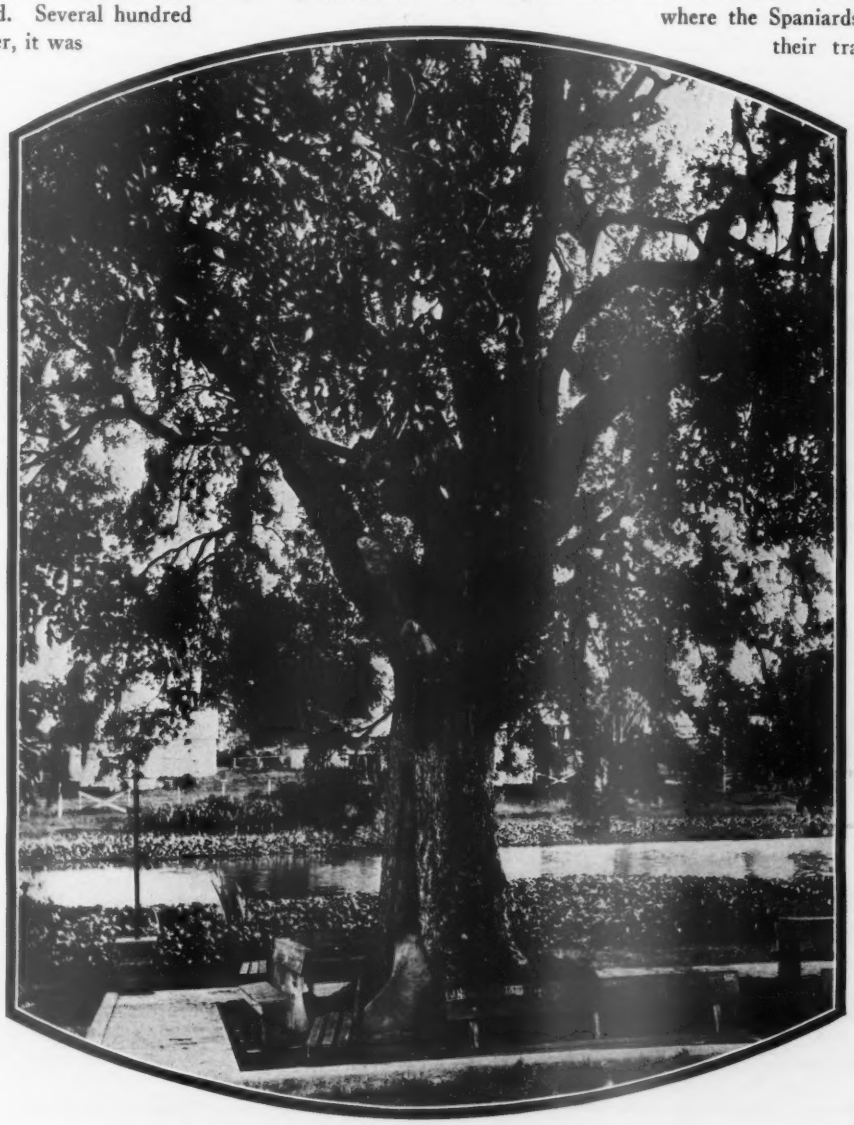
If you are not a member of the Association, place your order for copies now as the edition will be limited.

The Story of Evangeline

Great Tragedy is Written in this, the True Story of One of America's Most Famous Trees

By Georgia Williams Moritz

THE Evangeline Oak stands today on the shore of the Bayou Teche, in Louisiana, the most photographed tree in the world. Several hundred years ago, however, it was one tree in a great forest of live oaks whose leaves remained green throughout the winter. Then the Spaniards came, pushing their way up the bayou into the wild oak forest. They established a trading post near the spot where the great old tree stands today, exchanging their goods for the baskets, skins and furs of the Attakapas Indians.



The great old oak under which Evangeline met the faithless Gabriel, at St. Martinville, Louisiana.

Late in the seventeenth century England was dominating the great dominions to the far north, driving the French into exile. From their homes in Acadie, Nova Scotia, hundreds of French people were herded on ships and deported to the unknown wilderness far south. Families were divided, with no means of knowing that they would ever unite again. Many of them settled in Maryland and along the southern Atlantic Coast, while more than six hundred made their way to Louisiana and settled at Poste des Attakapas, where the Spaniards had maintained their trading post.

They found prosperity there, although there must have been many lonely hearts. They sent their farm produce down the bayou on barges to the market at New Orleans. Their supplies reached them by the same water route. Let the word get out that a barge was coming up the bayou, loaded with freight from New Orleans, and immediately the crowd gathered. Visitors were not frequent at Poste des Attakapas, and when some did come, everybody hurried out to meet them. Under the Evangeline Oak must have been a favorite waiting place—a regular central station waiting room—for it is almost at the door of the old Costillo Hotel, which is still standing, and it is there the guests were usually entertained.

Meanwhile, among the exiles who had been taken to Maryland, a young girl, the heroine of Longfellow's famous poem, "Evangeline," was grieving the months away. Emmeline Labiche had been engaged to Louis Arceneaux, and then had been cruelly separated, Louis being put on a ship that went to Louisiana. They seemed hopelessly lost to each other.

Emmeline, however, could not rest. She thought that she could find Louis if only she could get to Louisiana, for those in Maryland had heard that some of the exiles had been sent there. Her foster mother at last yielded to her pleadings; others, who had lost loved ones, consented to go along, daring to hope for reunions.

So three years after the exile a little company of 200 began the arduous journey to the far-away South, braving the many dangers along the route. There were unbridged streams to cross; there were steep, dangerous mountain trails where one misstep might mean death. The whoops of Indians were heard in the forests and sometimes a tattoed face peered from around a tree. But in spite of all dangers they at last reached the Mississippi. Here a boat was built, and the rest of the journey was uneventful.

On the day their boat was sighted, nearing the Poste des Attakapas, a crowd, as usual on such occasions, hurried down to the bayou. Louis, little dreaming that his old sweetheart was in the boat, waited for it, they say, standing under the great tree. Emmeline saw him there and gave a glad cry of joy. She could scarcely wait until the boat had drawn up to the bank before jumping out and running toward her lover. All around her were other happy reunions but she had no time to notice them.

The late Judge Felix Voorhies, whose home was at St. Martinville, which is the Poste des Attakapas of the present time, and whose grandmother was Emmeline's foster mother, wrote a book of the true story of Evangeline, as his grandmother told it to him when a small boy. This is how Madame Borda, the grandmother, told of the meeting:

"With the rapidity of lightning and in an ecstacy of joy she flew to his side. 'Louis, Louis,' she cried. 'I am your Emmeline, your long-lost Emmeline. Have you forgotten me?'

" 'Louis,' said she, painfully impressed by her lover's silence and coldness, 'why do you turn away from me? I am still your Emmeline, your betrothed, and I have kept pure and unsullied my plighted faith to you. Not a word of welcome, Louis?' she said, as the tears started to her eyes. 'Tell me, do tell me, that you love me still, and that the joy of meeting me has overcome you.'

"Louis Arceneaux, with quivering lips and tremulous voice answered, 'Emmeline, speak not so kindly to me, for I am unworthy of you. I can love you no longer. I have pledged my faith to another. Tear from your heart the remembrance of the past and forgive me,' and with quick step he walked away and soon was lost to view in the forest.

"Poor Emmeline stood trembling like an aspen leaf. I took her hand. It was icy cold. A deathly pallor had overspread her countenance and her eyes had a vacant stare. 'Emmeline, my dear girl, come,' I said, 'there may yet be happiness in store for you.'

" 'Emmeline, Emmeline,' she muttered, in an undertone, 'who is Emmeline?' Then, looking in my face with fearful shining eyes that made me shudder, she said, in a strange, unnatural voice, 'Who are you?' and turned away from me. Her mind was unhinged. This last shock had been too much for her broken heart."

Emmeline never regained her reason. She died, not long after, and was buried at the corner of the Catholic church, which still stands, just as it was in Evangeline's day, not far away from the oak. Her grave is pointed out to tourists today, under a clump of Spanish daggers.

The true story, as Judge Voorhies tells it in his book is quite different from Longfellow's well-loved poem. The poet has Evangeline spend a lifetime in searching for her Gabriel, only a few hours behind him in Louisiana—in fact, he cruelly allows him to pass her once, while she sleeps. Finally, when both are old, she finds him, dying.

But we know, from Longfellow's notebook, that he was told the story by Rev. H. L. Connelly, his dinner guest one day, who, in turn, had been told the story by someone, who had probably heard it from someone else.

Anyhow, we don't begrudge giving Mr. Longfellow the customary poet's license; it was not his purpose to record history, but to write a song. We marvel at the accuracy of his descriptions, when we remember that he was never in Louisiana, and knew of it only what friends and books had told him. As to the story, we are inclined to believe that the grandson of Madame Borda, whose adopted daughter Evangeline was, must have known the facts.

There are many Arceneauxs in southern Louisiana now, descendants of Louis, for he had a large family of sons and daughters who, in turn, had large families. In fact, the country is thickly settled now with the descendants of all those early Acadians.

The Evangeline Oak, though it has undergone several operations by tree surgeons and has lost some of its magnificent limbs, still stands in its place by the Bayou Teche to witness the joys and sorrows of its people.

Quetico-Superior Park Bill Reported Favorably

The Nolan bill for developing a coordinated program of forestry and recreation in the Quetico-Superior country of northern Minnesota was favorably reported with amendments by the House Committee on Public Lands on March 4. The major amendments cover controlled logging and transportation, recognition and affirmation of existing treaties, entry upon lands suited for agriculture, placement under jurisdiction of the United States Forest Service of scattered pieces of unappropriated public lands, and permission to maintain certain existing dams and reservoirs.

Chipmunk Isn't a Good Forester

By D. S. Olson

WHILE skirting the edge of an area recently planted to white pine, my attention was called to a clump of a hundred small pine seedlings growing from a spot no larger than a silver dollar.

"One of your tree planters got tired and planted a whole bunch of trees in one hole," suggested my companion, from good reasoning except that the clump of seedlings proved to be lodge-pole pine and that species is not planted in the region of white pine—merely another seed cache stored away by striped chipmunk which had sprouted.

Chipmunks gather seeds from the forest duff and what are not immediately eaten are buried in little pits no larger than an eyeglass. They rarely, if ever, gather cones as do their cousins, the pine squirrels. They are often seen working peacefully with the squirrels, however, the squirrels gathering the cones and the chipmunks gathering loose seeds that have spilled from the cones.

Underneath the screen box is an experimental planting. Chipmunk has been coaxed to pose on top of the screen which thwarted his efforts to pilfer the seed.

At the Southwestern Forest Experiment Station the Biological Survey has conducted tests of the appetite of the average Rocky Mountain mantled ground squirrel (*Callospermophilus lateralis*) and the San Francisco mountain chipmunk (*Eutamias cinercicollis*). These little animals show an astonishing capacity for pine seeds, the ground squirrel eating 340 pine seeds in one day and night, while the chipmunk can account for 237. It was found that a group of four seed trees in an acre of cutover, western yellow-pine land will produce about 92,000 seeds in a good year—just enough to carry one family of squirrels and three families of chipmunks two weeks.

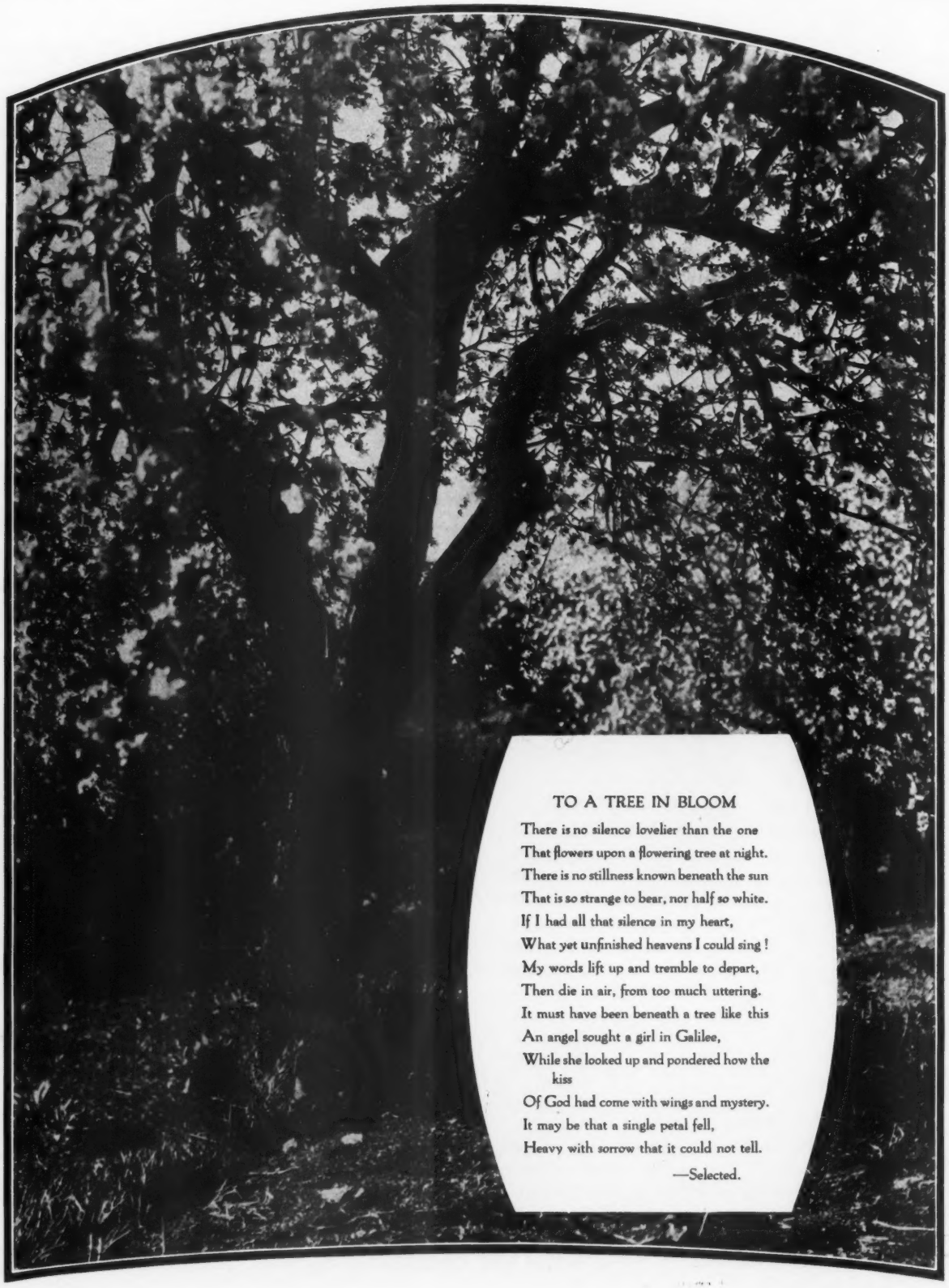
Early attempts to establish new forests by artificial seeding on burned-over slopes in the northern Rocky Mountain region often proved futile because an army of rodents followed the sowers, gathering up the seeds about as fast as they were put into the ground. On one area under observation, it was found that sixty-four per cent of the seed spots were pilfered within the first twenty-four hours after sowing. Baiting the seeding areas with poisoned grain did not prove very effective. Field mice pilfered both the poisoned grain and pine seeds. Undoubtedly many were killed later by eating the poisoned bait, but even so, they lived long enough to carry away much of the pine seeds. The chipmunks found the poisoned grain unpalatable, so left that bait undisturbed and carried away the pine seeds. In one test, twenty traps caught thirteen adult mice in two days, but no chipmunks. Poisoned grain was strewn near each trap in a second experiment and in one day the traps accounted for eleven more mice but no chipmunks, and the poisoned grain was not disturbed.

With such heavy losses of seed from rodent pilferings, and the uncertainty of germination and establishment on the dry, exposed slopes of the region, reforestation by direct seeding methods was abandoned for the more reliable and actually cheaper method of growing nursery stock and planting the cultivated seedlings. Here again chipmunk has put his foot in the forester's pie.

At the Savenac Nursery in western Montana birds and chipmunks cause much annoyance. The tempting banquet of pine seeds spread on the newly sown beds entices these tiny creatures from far and near. Large screen frames, placed over the beds effectively keep out the birds but the chipmunks manage to burrow under or find an aperture in a dislodged frame and soon become engaged in carrying away the seeds.

Sometimes chipmunk gathers seeds of the detested lodgepole from the forest at the edge of the nursery and hides them in the center of a beautiful bed of white-pine seedlings. More often he gathers newly sown seeds from the beds in the nursery and caches them in beds of a different species. It seems only natural that he wants to establish the caches some distance from his pilfering so he carries his stolen white-pine seeds across several compartments and hides them in the soft ground of newly sown beds—likely beds of yellow pine.

Perhaps he hoards more seeds than he needs. Perhaps his overzealousness has gotten him into trouble. At any rate, the following year, the nurseryman finds little tufts of seedlings sprouting everywhere—monuments to Mr. Chipmunk's absent-mindedness.



TO A TREE IN BLOOM

There is no silence lovelier than the one
That flowers upon a flowering tree at night.
There is no stillness known beneath the sun
That is so strange to bear, nor half so white.
If I had all that silence in my heart,
What yet unfinished heavens I could sing!
My words lift up and tremble to depart,
Then die in air, from too much uttering.
It must have been beneath a tree like this
An angel sought a girl in Galilee,
While she looked up and pondered how the kiss
Of God had come with wings and mystery.
It may be that a single petal fell,
Heavy with sorrow that it could not tell.

—Selected.

Conservation or Departmental Jealousy—Which?

By H. H. Chapman

THE continued advancement of American civilization and standards of living is not a foregone conclusion. It rests upon our resources, drawn from the soil in the form of minerals, timber and agricultural crops. No industry survives the exhaustion of its supply of raw material. Natural resources are subject to depletion, and some, including oil and timber, threaten to develop an alarming shortage in the near future.

Conservation of these natural resources is a matter of vital concern to the public. This can take the form of preventing needless waste or overproduction of minerals, and of preserving the productiveness of land for timber and farm crops.

Private ownership has not prevented waste and destruction. This condition has come about, not so much by forest utilization as through the neglect of protective measures and failure to provide for restocking. The devastation of forests has reached the proportions of a national calamity and operators still continue to deplete the residual stands, with but scant and ineffective measures for restoring the balance of growth needed to insure the permanence of the resource.

The forest area, now claiming 506,000,000 acres, has on the whole no prospective agricultural value—a fact borne out by the abandonment in fifteen years—1910 to 1925—of more than 56,000,000 acres of farm land in the eastern portion of the United States. Nearly four-fifths, or seventy-eight per cent, of this forest land area is privately owned, and except for an increasing insistence on fire protection which in the Southern States has been only partially successful, these owners can yet do about as they please with their forests regardless of the effect on the commonwealth. Erosion of hilly farms fills rivers with silt and increases the flood heights in the Mississippi, whole counties in the Lake States go bankrupt through delinquent taxes on cutover lands, and misplaced efforts to utilize for agriculture submarginal lands which should grow timber against a real need, serve to aggravate the agrarian problem.

Thirty years ago, these results were foreseen by a few leaders who realized that unbridled private enterprise has never in this or any other nation adequately safeguarded the fundamental resource of the forest. Public control was indicated and this could be accomplished either by the drastic method of regulation of private industry, or by the saner plan of retaining and acquiring public ownership of forest land.

Today it is evident that wherever the policy of public ownership has been adopted on a large scale, and under a trained personnel, forests are being rehabilitated and managed for permanent yields.

The setting aside of the National Forests from the public lands of the West laid the foundations of the practice of forestry in this country, built up the profession by creating a stable demand for its services, and was indirectly but actually responsible for the original founding and growth of the existing professional schools of forestry.

The United States Forest Service gave the initial training to a majority of the older leaders in state and private forestry and in the schools, and through its encouragement of state aid, greatly strengthened fire protection throughout the entire country. Today, both National and State Forests are being extended by purchase with the active support of the public. The National Forests include from forty to seventy-six per cent of all the forest lands within twelve Western States, and to the extent of this ownership at least, conservation of the forest resource is an accomplished fact. The administration of the National Forests is in the Department of Agriculture, to which it was transferred from the Department of the Interior in 1905. At the present time, after twenty-five years of development under four successive foresters—Gifford Pinchot, 1905-1909; Henry S. Graves, 1910-1918; William B. Greeley, 1919-1925; and Robert Y. Stuart—who stand at the head of their profession, it has come about that responsible officials in the Interior Department are contending for the reversal of this action, accomplished under the Roosevelt Administration, and the transfer of the National Forests to the Department of the Interior.

The settlement of such a question must be based solely on the best interests of the public, with conservation of the forests as the paramount consideration. Jealousy and departmental prestige must have no place in such decisions. Has the Department of Agriculture failed in its trust? Does this demand arise from the users of the National Forest resources? Almost universal testimony is to the contrary. Not only has the Forest Service developed its policies of forest management to a high state of efficiency, but, finding itself saddled with an enormous problem of grazing on these public possessions, it worked out a system under which range wars ceased, innumerable local interests were harmonized, and the maximum use of the forage was secured without diminution of the carrying capacity of the range, while the grazing fees instituted after the transfer in 1905 brought in from one to two millions of dollars annually, of which more than one-third, or thirty-five per cent, was distributed to the counties in lieu of taxes. These facts are known and accepted throughout the West.

Why were these National Forests placed in the Department of Agriculture? Since the creation of the first reserves in 1891, for fourteen years, they had been under the

control of the United States Land Office. Records of those days reveal the fact that the supervisors in charge were not chosen for their knowledge of forest administration. In 1902 when Dr. Filibert Roth, later Director of the Department of Forestry at the University of Michigan, was appointed by the Land Office to organize a forestry branch known as Division R, he was unable after a year's earnest effort to accomplish the needed reforms and resigned. The traditional policy of the Department of the Interior was to dispose of public land, not to conserve forests or grow trees. Meanwhile, under Gifford Pinchot in 1902, the Forestry Bureau in the Department of Agriculture had been given an opportunity on the Chippewa National Forest—then the Minnesota National Forest—through special legislation to show what it could do in this line; and under its veteran lumberman, Eugene Bruce, had successfully managed the sales of the Indian timber on their reservation, reserving seed trees and burning the logging slash so that today this area is covered with a dense thicket of splendid young pine timber in marked contrast to the 15,000,000 acres of stumps, burns and aspen thickets which mark the path of the ax on private lands in the remaining portion of the Minnesota pineries.

Based on this demonstration, the transfer was favored by the Minnesota senator, Knute Nelson, and by ex-Governor W. A. Richards, Commissioner General of the Land Office, and with the backing of the President it went through. Under the trained personnel of the Forest Service, the National Forests were within a few years expanded to their present area of almost 159,480,856 acres and the great initial battle for conservation of forests was won.

But the remaining public lands, still totaling 194,000,000 acres, of which but 4,188,000 acres are forested, remained in the Interior Department under its full jurisdiction. Homesteading for farms had practically ceased for lack of opportunity to make a living, without water, on what remained. It required a minimum of ten sections of land even in the best portions of the range to give meager support to one family from grazing. Yet so strong was the force of tradition that in 1916 this Department fostered and secured a stock grazing homestead law giving one section of 640 acres to each homesteader who would file on it for this purpose, and Mr. Clay Tallman, then Commissioner General of the United States Land Office, declared in a talk with the writer in New Orleans in April, 1917, that when the Department had exhausted the possibilities of disposal under this law they would move for some other law that would permit of further acquisition and would not rest until they had disposed of the entire area. The effect of this stock homestead law was to honeycomb large areas of range with small private holdings inimical to range management. The great bulk of the land still remains in public ownership. One state, Nevada, has 53,000,000 acres of these lands.

This open range was from the start a no man's land, open to all comers, with not a vestige of regulation or control, fought over by rival owners of sheep and cattle, the forage overgrazed at all seasons and progressively destroyed until the land lost its original stocking of browse, weeds and grass and became literally a desert.

Parallel with this destruction of grazing under the *laissez faire* policy of the Interior Department and on adjoining areas, the Forest Service of the Department of Agriculture was yearly attaining a more efficient range management. In spite of their innate dislike of all control, stockmen gradually came to recognize the fact that it was not to their interest to permit unregulated competition for forage, and many efforts were made to obtain the benefits of the Forest Service system by petitioning for extension of the National Forests to include purely grazing land. Neither of the departments desired this—the Interior because it meant diminished prestige, the Agriculture as it merely increased the burden of grazing regulation which was an offshoot of their main purpose of timber production. Indeed, this lusty infant was hard to control and often threatened to get out of hand by the attempts at domination on the part of the livestock interests seeking perpetual rights to graze regardless of damage to tree seedlings. At no time during this twenty-five year period was the Department of the Interior successful in securing legislation for the creation of grazing reserves to be administered on the principles developed and tested on the National Forests, which could, if passed, have turned the scales in favor of the conservation of this resource, and solved the question as to what to do with the remaining public lands. The Department, having failed to do this, now champions the proposal to grant these lands, which have been largely ruined, to the several states on the basis that the "government" is not competent to deal with questions involving so intimate a knowledge of local conditions, thus ignoring as nonexistent the work of the government as carried on in the Department of Agriculture.

This grazing issue is the crux of the whole situation. The Interior Department has finally been forced to realize that something must be done about these grazing lands. There are not lacking members of Congress who would favor transferring the control of this public grazing to the Agricultural Department which has proved its capacity to handle the situation. Such a solution is unthinkable to the Interior Department which has, through the Land Office, for so long a time regarded the unreserved public lands as one of its main responsibilities. Yet for fear that the continued failure of the Department of the Interior to secure the authority to assume the burden of conservation on these lands will ultimately result in such dismemberment, it is proposed to take back the National Forests, and thus control the entire situation and recoup the Department for such prospective loss.

Leaders in forestry throughout the country look askance at such proposals. The Forest Service is at all times subject to pressure from self-seeking interests who desire a more liberal construction of regulations set up in the public interest to prevent misuse of timber and grazing resources. Only with the greatest difficulty has the Service been able to prevent excessive overgrazing, which in turn destroys the forest by exterminating tree reproduction. What would be the effect were the National Forests placed under a department whose remedy, for twenty (*Continuing on page* 230)

The Lost Lake

A Story for Boys

By G. E. Bentley

THERE was no question about it, our map was wrong. We were lost in the wilderness of the Northern Peninsula of Michigan, many miles from a settlement. To make matters worse our food supply was nearly exhausted. Should we turn back? We could always do that, but it would be to acknowledge ourselves defeated, and we weren't ready for that yet.

We had started—six of us—from a boy's camp to find what appeared on our map as Cheney Lake. The map showed that we could go up the Presque Isle River until we came to the lake—two days up and two days back. We had three canoes and provisions for four days. Simple enough; but here we were—lost.

All had been beautiful the first day. We got onto the river where the highway crossed it, and paddled around bend after bend. Lazy current, deep water, bright sunshine and cheerful companions raised our spirits to the top notch. Now and again a great blue heron, surprised in his frogging, would flap up ahead of us. Deer tracks were everywhere on the banks. Once we surprised a doe and her fawn standing in the reeds, and once a prickly porky, sunning himself on a log, was poked into the water to settle an argument as to whether he could swim.

Photograph by Ernest C. Oberholtzer.

"We made our camp on the bank of the river."

We made camp that night on the bank of the river. As we sat around the camp fire we made plans for the following day. We had gotten along so famously that we concluded we must be two-thirds of the way to the lake. None of us had ever been up this way before; in fact, not one of the leaders who had been longest at our home camp had ever tried to go to Cheney Lake. We figured that it might become quite a popular trip if we succeeded in blazing the trail. Bright and early the next morning we started out again. Then our troubles began. The river became narrower, and logs spanned it from side to side. Time and again we unloaded, boosted the canoes over or around fallen trees and reloaded. At noon we thought we must have made three or four miles of progress and had covered half the remaining distance to the lake, so we were still pretty cheerful. A lumber camp, falling into decay, gave us a few minutes of exploring; but the only inhabitants we found were three huge porcupines. In another place we found stumps ripped open by bear, probably in search of ants and grubs.

Early in the afternoon the character of the country changed. It had been flat with reeds and cattails near the creek and the high ground quite a way back. Now the hills closed in about us and the stream became rocky and shallow. Did you ever portage up a rocky stream with not quite enough water in it to float your canoe, and the banks so steep and tangled with underbrush that the only place to walk was in the water? If so, you know what we suffered for the next three hours. Occasionally we could rest by floating the canoes across a still pool for a hundred feet, but mainly it was a case of splash along over slippery, rolling stones.

We emerged at last into a flat region with deep winding water and marshy banks. And now — Great Scott, the stream forked! Nothing like that on the map! Both branches were apparently equal in volume of water. Which way? After considerable arguing we decided that the right-hand branch offered the greatest possibility of getting us to our lake, so to the right we went. The stream dwindled and shrunk until it was a mere trickle of water in a wide bed of bottomless mud. We climbed trees to see whether the lake was ahead. We could see nothing. On account of the depth of the mud and the shallowness of the water we could neither carry,

paddle, nor push the canoes. So back we went to the fork, and up the left branch.

Night was at hand and ugly swamps were on all sides—not a pleasant camping prospect. Finally we camped on the driest spot we could find, tired, wet to the waist and hungry.

During the night it froze hard and in the morning our wet pantaloons would stand alone. Fire and sunshine, however, soon reduced them to a state of habitability not to say comfort. After a frugal breakfast we struggled up the creek again. Now began our real battle. Tag alders, leaning over the creek, barred our way. All morning the canoes took turns leading the way and chopping through the entanglements. At noon two scouts went ahead on foot while the rest prepared lunch. The scouts returned with the news that the creek swung off to the southward, thus eliminating all hope of its leading us to Cheney Lake. They also reported that a quarter of a mile ahead was an enormous beaver dam, eight feet high and seventy-five feet long. Above the dam were no alders and the water was deep. This raised a new hope. If this stream continued south it must be the outlet of a lake near our camp, and if we went on, we might get to camp the back way, so to speak. On we went, by the dam, through the still water for perhaps three miles when alders and rocks again brought us to a standstill.

What now? Three days from home and one day's scant provisions left. Each boat had its own opinion as to the next move. One crew wanted to leave the others and strike out through the forest for the main camp, get more provisions and return. Another wanted to push on up the creek, paddling when we could, portaging when we had to, in the belief that it couldn't be far now to the lake near our camp. The third wanted to turn tail and skedaddle back the way we had come as fast as we could, in the hope that we wouldn't have to starve *very much* before we could get back. Since we didn't know in which direction camp or the lake lay, the last plan finally prevailed.

At the first streak of light we were up and hustling. No arguing, no discussion. We knew what we had to do and we knew that the sooner we got it done the happier we'd be. The way we got breakfast out of the way and our duffel packed would have done credit to any set of old woodsmen. At 8 o'clock we reached the place where we had eaten lunch the previous day. At 10 we reached the head of the rapids. Zip! Everyone grabbed his load and started splashing down the stream, fairly skipping from stone to stone. No thought of falling now. We were going to make a record, and incidentally we were headed toward food. At 11 o'clock we reached the place where we had lunched two days before. At noon we recklessly devoured everything we had with us.

And get home we did—tired out but happy. We had covered in one day what it had taken us three days to do on the way up. We hadn't found our lake but we had proved that the river was not the way to get to it. We had explored and mapped roughly some unknown territory and shown that the existing map was seriously in error.

Forestry and Conservation in Congress

On February 24 the President urged Congress to limit new legislation so appropriations will not exceed the present Federal annual income of approximately four billion dollars. Relatively small among twenty-four items whose listed appropriations would aggregate $1,735,000,000 was one of $10,000,000 for protecting National Forests and another of $50,000,000 for developing National Parks and memorials.

This caused apprehension for three forestry bills which The American Forestry Association is actively promoting, namely, the Englebright bill authorizing $4,500,000 for protecting National Forests from fire; the new Clarke-McNary bill for $50,000,000 over ten years to continue forest purchases in the eastern states, and the Knutson-Vandenberg bill, authorizing $400,000 for forest planting on National Forests.

These bills carry appropriations aggregating $9,000,000. If they represent the President's rounded total of $10,000,000, it should be remembered that the appropriation bill now before Congress carries $4,415,000 for similar items, so they would actually increase the burden upon the Treasury by only $5,485,000.

On March 10, 12 and 13 the House Committee on Agriculture conducted public hearings on the Englebright bill (H. R. 3245) whose supporters have been encouraged by a statement from the Director of the Bureau of the Budget that it does not interfere with the President's financial policy. The President declared in favor of efforts that will minimize the necessity of spending money in the suppression of fires on National Forests in a message submitting the budget to Congress. The testimony of representatives of the Forest Service favoring the bill was supported by written endorsements, and by the personal appearance of representatives of a number of national associations.

Public hearings before the House Committee on Agriculture on Representative Clarke's bill (H. R. 5694) for forest purchases in eastern National Forests, and on Representative Knutson's bill (H. R. 5410) to authorize funds for planting on National Forests have been published together. The committee reported favorably on the Clarke bill, but no report has been made on the Knutson bill.

The Public Lands Committee of the House reported favorably on March 4, on the Nolan bill (H. R. 6981) to develop a coordinated program of forestry and recreation in northern Minnesota.

Acting Secretary of Agriculture Dunlap's disapproval of the principle underlying the Oddie bill (S. 3130) providing emergency action for the control of insect infestations on National Forests has temporarily delayed its consideration.

The first deficiency appropriation bill passed the House on February 21, the Senate on March 21, and was referred to conference. This carries $3,300,000 for fighting forest fires on National Forests during the past year, $45,000 for fighting forest fires on the Indian forests during the same period, $180,000 for control of forest insects on National Forests in the northwest, and other important items. The appropriation bills for the Department of Agriculture and for the Department of the Interior have passed the House and await action in the Senate.

Commenting on Senator George's bill, S. 2354, to amend the agricultural marketing act to permit naval store operators to take advantage of loans which may be made by the Federal Board, the Secretary emphasized the temporary character of many turpentine operations and questioned whether the products could be classified as agricultural. No further action has been taken.

Taft on Conservation

Death of Former President and Chief Justice Recalls Famous Conservation Address in Minneapolis in 1910

For The American Forestry Association
with best wishes.
Wm H Taft

In words that will remain forever part of the record, William Howard Taft, as President of the United States, addressed the National Conservation Congress in convention assembled at Saint Paul, Minnesota, in 1910. His calm and judicial expressions at that time were typical of the man, and wrote him down as a staunch friend of forestry. Clearly and simply the former President and Chief Justice of the Supreme Court defined his understanding of conservation and its vital importance when he said:

"Conservation as an economic and political term has come to mean the preservation of our natural resources for economical use, so as to secure the greatest good to the greatest number . . . Today we desire to restrict and control the acquisition and use by the capitalist of our natural resources . . . As President of the United States I have, as it were, inherited this policy of conservation, and I rejoice in my heritage. I prize my high opportunity to do all that an executive can do to help a great people realize a great national ambition. For conservation is national. It affects every man of us, every woman, every child. What I can do in the cause I shall do, not as President of a party, but as President of the whole people. Conservation is not a question of politics, or of factions, or of persons. It is a question that affects the vital welfare of all of us. . . . Nothing can be more important in the matter of conservation than the treatment of our forest lands. It was probably the ruthless destruction of forests in the older states that first was recognized by Congress by an act calling attention to the necessity for a halt in the waste of our resources. This authorized the executive to reserve from entry and set aside public timber lands as National Forests. . . . Real conservation involves wise, nonwasteful use in the present generation, with every possible means of preservation for succeeding generations. The burden is on the present generation to solve this problem, and not to run away from it as cowards, lest in the attempt to meet it we may make some mistake . . . The problem is how to save and how to utilize—how to conserve and still develop—for no sane person can contend that it is for the common good that nature's blessings should be stored only for unborn generations."

YEAR after year articles on forest fires continue to appear. The conclusions of the writers are about the same. There seems to be unanimity of opinion that fires are very destructive, that the bulk of them are caused by carelessness and that they should be stopped. It is, however, foolish for us continuously to deceive ourselves. According to my observations extending over a period of thirty-five years in the southeastern United States they are just as common and just as destructive as ever. They will probably continue to burn for many long years to come. We very foolishly look to Europe for guidance. Much of the Old World has wet summers; in other sections with long dry periods fires are not uncommon in spite of many precautions, laws, long years of training and experience, cheapness of labor and ready market for fagots.

Fifty-year old pine burned over in Baker County, Florida.

Everybody will admit that in the cities of America we have efficient fire service. Although all means possible are used to keep down insurance rates, extinguish fires and prevent loss of life, 15,000 lives are sacrificed and a half a billion dollars worth of property lost every year. Insurance experts will tell you that at least two-thirds of these fires are caused by carelessness. Comparatively few fires are set with malice aforethought.

It is hardly reasonable to think that foresters could ever exceed this efficiency. After many years of apparently fruitless endeavor, one is prone to philosophize. The majority of men strive to do things worthwhile. But we must not forget that a large percentage of mankind is engaged in destructive industry. The best measure of civilization is the degree to which we are mindful of the future, especially the welfare of posterity. When we destroy the forest we let loose the destructive forces of nature—fire, wind and water. In handing posterity an earth divested of vegetation and depleted of soil fertility we defeat one of the main reasons for existing at all. Man by his destructive activities makes the earth unsafe for his own existence. Man does not die, he kills himself.

The forest is a protective blanket over the face of the earth. Aside from yielding valuable materials it is the world's greatest saviour. Every man who travels knows that fire is consuming it. Fire, like alcohol and gunpowder, is unsafe in the hands of children. Psychologists will tell you that the majority of people regardless of the years to their credit are mentally fifteen years old. In a land of paternalism this element is held in check; in a land of democracy it can run rampant. Little men can run little banks, but they break big ones. Little men can cause

fires but it takes an army with a good general to put them out.

With the majority of mortal minds at the age of fifteen years how can we best proceed to save what is left of our forests and soil productivity? I can only say education with eternal and costly vigilance fortified with courage, patience and reason. Some say fight fire with fire but that is too dangerous and fire even with light flashings in damp weather is destructive. Reduce the rubbish on the forest floor by piling and burning. This is good if not too expensive. Plant as far as possible, and encourage the growth of fire resistant species. But we must not forget that the longer a forest is protected the thicker the duff on the surface and the hotter and fiercer it burns. Also that fire is no new thing on this earth. Although accelerated and increased by man's activities it has always been a potent geographic agency in molding the nature of the surface of this globe. Thousands of square miles of desert and prairie are no doubt due to its activities. I know of an island in Florida which tradition says was once covered with forest. During a dry time it burned with such fury nothing could stop it. Today it is a prairie. Charred roots may still be found under the surface of the soil.

Woods fires in Florida annually burn over such pasturage as this.

Unless we can find a way to check fires in the southeastern United States our forests will soon be confined to the wet lowlands. As a youth I pictured the United States a land of fertile farm valleys with the mountains covered with well cared for forests. Except in wet sections it is a land of bare and eroded hillsides and flooded valleys. During the past two years the destruction by flood has been beyond computation and the end is not yet. There is more to come. If the forests of the world were useless no one could afford to despoil them. The trouble with wood is that its uses are so many and varied its usefulness has been its undoing. In the early days it was necessary for fuel and home building. I doubt if man could have developed without its friendly aid.

I am particularly interested in my home State, Florida, which probably gets completely burnt over once in about every five years, excluding, of course, the wet lowlands. This has been happening for many years. It is generally so low and flat that erosion has not seriously injured it except in the northern part. The poor cracker, of course, gets blamed for most of it. Passing travelers as well leave fire in their wake but back of all of this there is a peculiar condition which makes it possible. Similar conditions apply to other parts of this Union. I refer to the indirect workings of the nefarious Arkansas Swamp Act. This law, and the Lieu Land Laws, emanating from Washington, have done nothing but spell mischief from the day they passed. It has a very direct bearing on the fire question. It has to do with ownership and the character of the ownership has a lot to do with fires.

In times past if a big company wanted a million or more acres it would put its surveyors on the job. Detailed maps and the necessary affidavits would soon develop. In due time this so-called swamp land would be approved to the state by the Federal Government. Then the state would sell it to the company for a small sum with a small down payment. The trees would be turpentined or lumbered or both. Fires subsequently swept over it, cattle grazed over it and nobody cared. In case the company could not sell it to good advantage it went back to the state for taxes. A few years ago I bought 500 acres in south Georgia for $500. My chain of title seemed good but somewhere along the line a lumber company had secured a tax deed to it. On the strength of this deed it turpentined and cut the trees and then went out of business. Some good authorities estimate that there is probably somewhere between thirty and fifty millions in taxes due the state. Lawyers have been paid their fees in land. The fee or ownership of this land is not very sacred. It is not like an old world heritage handed from father to son. It is more like the rind of a sucked orange.

I have a piece of land in the heart of Florida which is very dry and sandy and at least one hundred and fifty feet above sea level. In order to produce a Bermuda grass lawn watering daily is necessary, and yet according to my abstract it was originally acquired from the Federal Government under the Arkansas Swamp Act. There are constant law suits in reference to some of these lands. Plant ecologists from the universities are brought in from distant parts to testify as to what constitutes swamp land. Like alienists in a sanity suit there may be three or four on each side. A swamp is usually defined as a piece of land so continuously wet that it cannot be cultivated without drainage. (*Continuing on page* 254)

On And Off

—F. D. Vanover

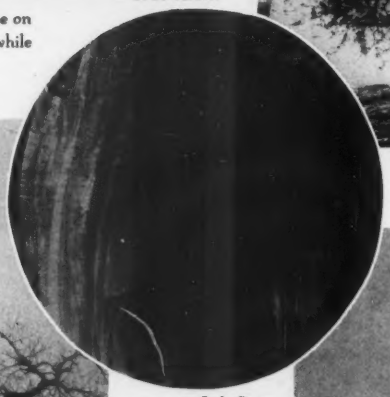
Zachary Taylor paused to carve his name on this beech tree in Louisville, Kentucky, while on a deer hunt in 1835

—Titus Ulke

A winter fantasy in British Columbia—a great snow "mushroom"

—William Thompson

Sacred mulberry tree near Silve, Palestine, carefully protected by the hordes of worshiping natives



—J. A. Cope

Face carved in tree 26 years ago was revealed at Liberty, New York, when it was cut down

—Robert S. Walker

Bear and Seal Rock near Colorado Springs, Colorado

—Agnes W. Spring

Famous old Indian Council Tree still standing in a valley near Timnath, Colorado

THE TRAIL

—Hewlett Cornwall

Two ash "knees" near North River, New York. Both trees are healthy

—M. C. Lukens

On this beech tree at Washington, D. C., are carved the names of Civil War soldiers who camped beneath it

—John W. Weber

A freak wild cherry tree growing near Galena, Illinois. Twisted and unsightly, it bears good fruit

The face of a child in walnut veneer. It was formed by unusual grains, knots and gnarls

—Robert S. Walker

The "Kissing Camels" below Pikes Peak, Colorado

This old chestnut tree for centuries stood in New York City. It was cut down years ago

Photo by Louis Jensen

Near the summit of Mt. Clark.

FOREST PEOPLE

A Trailer of the High Sierras

By JULIETTE MOURON HOOD

MANY years ago a number of pictures of the California redwoods and the Yosemite Valley found their way to Bjerget, a small fishing village on the coast of Denmark. With them, from the lips of sea-faring men, came unbelievable stories of America. The natives looked at the likeness of the redwoods and listened to the stories in awe. Among them was Louis Jensen, a lad of seven, impregnated, even at that age, with a love for outdoor beauty and a thirst for adventure.

The pictures stirred the lad to new dreams, and he resolved that the Sierras of California would be his playground. In 1909 this dream was realized and Louis, then a man, stood on Inspiration Point in the Yosemite for the first time. Today he knows practically every mountain peak in the California Sierras—many of them more intimately, perhaps, than any other living soul.

Louis Jensen, on the summit of Mt. Lyell, 13,099 feet above sea level.

Louis Jensen studied photography in Denmark when he resolved to live among the big trees. His purpose was twofold—to send back to his native villagers more and better pictures of the Yosemite and the redwoods, and to record for his own delight the beauty and wonders he encountered in his travels. His faithfulness in building up this unusual record of mountain peaks is found in his collection of photographs—one of the most unique in the West.

The events leading up to the realization of Louis Jensen's dream of a Sierra home were as glamorous as his expeditions to snow-covered mountain summits. At seventeen he was following the seven seas, but the life of a sailor did not dim his unconquerable desire to explore the country of the big trees. Eventually he set foot on Canadian soil and worked in lumber camps southward through Washington and Oregon and into California.

Mountain climbing came to him naturally and from the many lumber camps he followed its lure. He explored rugged slopes, mounted snow-covered summits, marveled at the crystal streams and glacial lakes, listened to the story of the ages as told by the great forests, studied the flowers and shrubs, and made friends with the wild things. Each day Nature gave him something new. But southward, ever southward, he went, traveling alone with his blankets and camera. In two years he looked down into Yosemite Valley.

"Words cannot describe my emotions when I first looked down into Yosemite Valley," Mr. Jensen

relates. "Words cannot convey feelings of this kind. I was satisfied, happy and thankful. What sunny and smiling welcome it gave me; what silent strength and dignity it spoke. The river and trees called to me to live among them."

Then followed the years the boy Louis had dreamed of, the years he had labored and struggled to enjoy—years among the big trees and the towering peaks of the Sierras. Eighty-three mountain peaks have been scaled and photographed by him, among them Mt. Whitney, Mt. Hoffman, Mt. Lyell, Parson's Peak, Ritter Peak and others, all more than 12,000 feet above sea level. He will casually tell you he had rather climb Half Dome in the Yosemite Valley than El Capitan because it is harder to climb and is 1,000 feet higher. And Mr. Jensen knows, for he enjoys a delightful intimacy close to the heart of Yosemite Valley. He knows every trail and stream, every mountain and valley. He has explored at sunrise and sunset, in winter and in summer—ever with his camera to record the beauty he gazes upon. Like the Yosemite, the land of the big trees is his playground. He has known and photographed the Calaveras, Tuolumne and Mariposa groves.

From nature to humanity is a short step. Mr. Jensen enjoys the comradeship of children and has made them his companions. From his home in Sonora, near famous Angels Camp and Jimtown, he has taken many of them on pilgrimages into the Yosemite, the great Kings River wilderness and even the high Sierras.

Photo by Louis Jensen

Beautiful Half Dome in Yosemite Valley, which Mr. Jensen enjoys climbing—a more difficult task, he says, than scaling El Capitan.

Not so long ago a number of Danish officials came across a collection of photographs Mr. Jensen had sent back to the good fishing folk of his birthplace, and were so impressed with the wonder they portrayed and the magnificence of Mr. Jensen's art, that the Danish Government purchased the entire collection. With this money the trailer of the high Sierras made his parents in Denmark comfortable for life.

Mr. Jensen, although he delights in photographing the beauty he uncovers on his strange pilgrimages, considers his collection as "poor images."

"Pictures fall short of reality," he will point out. "They merely stand for what they are—mediums through which attention may be called to what might be seen. For those who really want to feel the magnificence of the Sierras there is but one thing to do—come and live in them. Do not come for a day, but come for months, year after year, until their exquisite beauty becomes a part of you."

Little Stories by the Men of the Southern Forestry Educational Project of The American Forestry Association Who are Carrying the Message of Forest Protection to the People of the South

"FOLLOWING a show and lecture at a schoolhouse near Henleyfield, Mississippi, I was approached by a farmer who had witnessed the motion pictures.

" 'The young pine in the picture reminds me of my young trees,' he said. 'My boys and I own a bit of land and we have been keeping fire out for several years. It sure pays, young man. I've never had better looking trees.'

" 'Have you been bothered by fires set on adjacent lands?' I asked him.

"His features hardened. 'That's one of the reasons I'm glad you young men came down here. I saw some of the men here tonight who have been giving me trouble and I think it will be a darn good lesson for them.' "—J. B. TOLER, Lecturer and Motion Picture Operator, Mississippi.

"A man came up to me following a motion picture program at Soperton, Georgia, and declared that his wife had been 'converted.' When I asked for further facts he replied with a grin: 'The old lady has been sick abed for a long time—unable to do anything—but when she heard about your show tonight she insisted that I drive her in ten miles to see it. Your talk and motion picture surely converted her—for on the way out of the school after the show was over she told me if I ever set fire out in the woods again she was most certainly going to find herself a good pine club and whim wham hell out of me."—CARL B. WILSON, Unit Director, Georgia.

"While exhibiting at the Tampa, Florida, Fair, I was approached by a tourist and his wife who wanted to know if the truck had been on exhibit at the Tin Can Convention at Arcadia. I told him that it had been and he broke into a proud smile.

" 'My home is in Michigan, but after hearing your lecture at Arcadia and seeing the motion picture *Pardners,* my wife and I decided to buy some land here in Florida and grow trees. We never realized the value of southern pine before." —E. P. SIMMONS, Lecturer and Motion Picture Operator, Florida.

Rural school children in Mississippi ready and waiting with anticipation to see "Pardners," the motion picture made by the Project.

"When I arrived at a small schoolhouse at Abbeville, Georgia, to give a motion picture program, I was told that a street carnival in a nearby town would draw most of the people in the community. However, I made all arrangements and waited. A number of old men with beards were the first to arrive, and presently a large group of boys came into the building.

"After surveying the room a youngster spoke up. 'I don't know whether I want to come to this thing or not.'

"Another boy called the others around him. 'C'mon, let's stay,' he said. 'When you see old gray-bearded men go to see something you can just bet it'll be good.'

"The boys not only remained but brought in others. After the program one was heard to remark: 'See, what did I tell you. The show beat the carnival a dozen ways!' "—DAVE STORY, Lecturer and Motion Picture Operator, Georgia.

EDITORIALS

Indian Forests

IN FACT and fiction, the American Indian is closely associated with the forest. It is his natural and traditional environment. It is where he finds his greatest health and happiness and the fullest expression of his native genius. And yet in our efforts to fit the Indian into American civilization, his natural environment seems to have been pretty generally overlooked. It is true that Congress has passed acts providing for the management and cutting of forests on Indian reservations under approved forestry practice and that the Indian Forest Service has made commendable progress in the management of reservation timber.

But Indian Forests with their abundant possibilities of promoting the welfare of the Indian have not been fully visualized or seized upon by Congress, although the Department of the Interior in recent years has urged the creation of a number of Indian Forests. There are pending in the present session of Congress four bills, introduced in the House by Congressman Leavitt and in the Senate by Senator Frazier, designed to withdraw from entry or sale and to reserve as Indian Forests the classified timber and grazing lands in the Coville and Yakima Indian reservations in Washington, and the Warm Springs and Klamath Indian reservations in Oregon. If these bills are passed, as they ought to be, several million acres of virgin forests will be saved for the Indians of these reservations and managed by the government under conservative forest practice. The net income from the sale of timber and forage will be deposited in the Treasury of the United States to the credit of the Indians and will draw interest at the rate of four per cent annually.

The general public doubtless has little conception of what has and is happening to Indian timberlands in the absence of specific legislation such as that provided in the bills just mentioned. The Indian reservations, aggregating over seventy million acres, belong to the Indians. The Indian Service in the Department of the Interior functions not as owner of the land but as guardian or trustee of the real owner—the Indian. Under the policy of the government, Indian lands are from time to time opened to entry by the reservation Indians and thus pass from federal stewardship direct to individual Indian ownership. Approximately thirty-six million acres have to date been turned over in fee simple in tracts of about one hundred and sixty acres.

Experience has shown that the Indians seldom develop these small tracts as homesteads. They do not take to farming. Furthermore, much of the land allotted has not been agricultural. More often than not the Indian sells his undeveloped "homestead" or the timber upon it to a lumber company or the best buyer available. The result is that large areas of forests in the reservations have been broken up and dissipated and lost for all time so far as the Indians and their custodian, the federal government, are concerned.

Approximately thirty-five million acres of unallotted Indian lands remain, of which some six or seven million acres bear valuable forests. The integrity of these forested areas ought to be maintained as tribal forests. They could be made to contribute more to the welfare of the Indian than almost any other institution. Their management for the commercial production of timber would provide permanent income and work for members of the different tribes. In addition, their recreational possibilities for camping, hunting, fishing, mountain hiking and wilderness trips are large and under development would bring an influx of visitors that would provide employment for the Indians as guides, caretakers, packers, game wardens, and in numerous other capacities. In the course of time the Indian could be trained to occupy ranger and other administrative positions in the tribal forests. This type of life would be far more to the bent of the Indian than farming. He would be in his natural habitat and following pursuits for which he is inherently gifted.

The possibilities are appealing and unlimited. The bills introduced by Representative Leavitt and Senator Frazier not only merit prompt passage but nation-wide support as the beginning of a humanitarian movement to preserve for the Indian the last remnants of American forests that he can rightfully claim as his own.

Red Taping the War on Forest Insects

REFUSAL of the Department of Agriculture to endorse Senator Oddie's bill, providing an emergency fund of not to exceed $500,000 annually to be used in the control of tree-killing insects on the National Forests, will serve to strengthen a long standing feeling that something is lacking in the Department's handling of the forest insect menace. It is well known that the predominant hazards of the National Forests are fire and insects. For many years

the Department has been authorized by law to make expenditures and incur deficits in meeting forest-fire emergencies where regular appropriations are not sufficient to protect public property. Senator Oddie's bill is based on the same principle that prompt action is necessary in controlling insect infestations. The soundness of the principle seems abundantly proved by past experience of the Department in trying to cope with insect outbreaks without adequate or readily available funds.

The Department, however, appears to be quite content to continue as in the past. Commenting on Senator Oddie's proposed legislation, the Acting Secretary of Agriculture, in a recent letter to the Senate Committee on Agriculture and Forestry, stated that he does not feel "justified in urging the enactment of legislation which would authorize expenditures for the purpose without the customary correlation of those proposed expenditures with all other expenditures of the federal government through the functioning of the Bureau of the Budget, or without the prior appropriation of money by Congress in the regular appropriation bills or otherwise."

The Acting Secretary sees "a fundamental difference between an insect infestation and a forest fire." The latter, he says, must be attacked immediately, while an insect epidemic permits of several months delay during which, if regularly appropriated funds are inadequate to meet the situation, the attack may be reported to the Bureau of the Budget, recommendations formulated and transmitted to Congress and included in a deficiency appropriation bill. In support of this traditional government procedure the Secretary cites a recommendation which has been enroute during the winter through the regular channels of the Department—the Bureau of the Budget, the President, and finally to Congress—requesting a supplemental appropriation of $180,000 for insect control work on the National Forests in Idaho, Montana and Wyoming.

The complacency of the Department in failing to avail itself of the opportunity of preparedness in controlling forest insects will be hard for the public to accept. Failure to have a free hand and an emergency fund with which to stop insect attacks in their early stages has unquestionably cost the nation millions of feet of public timber and hundreds of thousands of dollars. Carrying the emergencies to Congress through regular governmental channels may or may not provide the emergency funds needed in proper time. Past experience goes to prove that Congress, particularly in highly crowded sessions, does not always reach these insect items.

The Acting Secretary's citation of an emergency infestation in Montana, Idaho and Wyoming appears to be an unhappy reference in support of the cumbersome procedure to which he adheres. Certainly, the National Forests of Montana are a striking example of the government's failure to control insect attacks either in their incipient or subsequent stages. Starting in a small way at Swan Lake in the Flathead National Forest, Montana, as long ago as 1910, an infestation in lodgepole pine has defeated every effort of the De partment to cope with it. Today, it is far-flung in three states and threatens to invade the forests in Yellowstone National Park. No one will venture an estimate of the amount of timber that has been killed or the total area blighted by this beetle that refuses to wait upon the "customary correlation of government expenditures or the functioning of the Bureau of the Budget." Had the Department in years past the authority which Senator Oddie's bill contemplates it could have dealt with the early and subsequent outbreaks with adequate funds and more effective control.

The $180,000 which the Department recently recommended to the Bureau of the Budget and the Bureau of the Budget recommended to the President and the President recommended to Congress is not for use in fighting the beetles in lodgepole pine. That battle has been abandoned as hopeless by the department's forces. The special appropriation is to apply to a new outbreak of the same beetle in white and yellow pines in the Couer d'Alene National Forest in Idaho. All of which serves to emphasize the fact that bugs, if not properly controlled, may be as destructive as forest fire.

The public is not interested in "customary correlation with all other expenditures of the federal government" or other forms of meticulous procedure in dealing with either forest fire or forest insects on the National Forests. It is interested in just one thing—prompt and effective control at minimum cost. Upon that record will it judge the Department's stewardship.

Shade Trees - Their Kinds and Care

By G. H. COLLINGWOOD

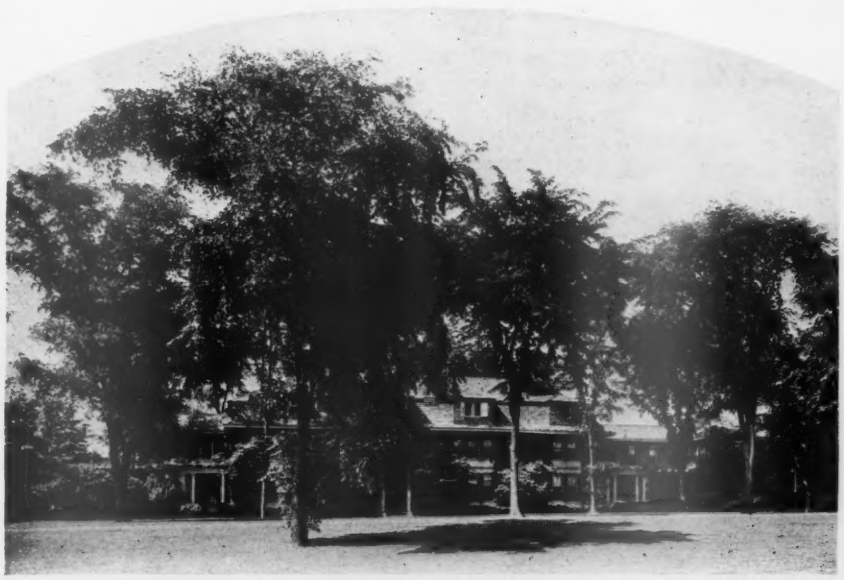
STREETS lined with shade trees, homes sheltered by protecting trees, parks filled with magnificent trees—all of these are characteristic of America. East, west, north and south, trees are an intimate part of our landscape. The age of the planted shade trees often indicates the time when settlement began within that community. The stately elms of New England, the spreading live oaks of the Southland, the swaying Lombardy poplars of the irrigated valleys in the West, the plume-like eucalyptus of the lower Pacific slopes — all were planted by thoughtful, far-seeing men and women. Some of them were hardy pioneers whose covered wagons carried seedlings as well as seeds of favorite shade trees. The elm of New England prospered westward into Iowa, eastern Nebraska and again on the northern Pacific slopes, but lack of sufficient moisture and mild weather held the live oak to a more restricted area. Farther west, the plainsman had to be content with cottonwood and hackberry trees, or rows of Lombardy poplar along the irrigation ditches. Along the Pacific slopes different conditions demand different trees, and varieties entirely new to the settlers from the East have been resorted to. From San Francisco south no shade tree is more characteristic of the country than the several species of eucalyptus. Yet, paradoxically enough, this is not native but was brought over from Australia. Our country is so large, with such a variety of climatic and soil conditions, as to make it impossible to recommend any single tree for general planting. A country-wide similarity of trees would be unfortunate, for those trees that are characteristic of a region help give it a peculiar charm. But the essential points of a good shade tree are relatively few, and will fit the conditions of all parts of our country.

> Few can be owners of forest land, but nearly everyone has a personal interest in trees. It isn't even necessary to own the land upon which they stand, for every resident of a village or city has street and park trees available for his pleasure. "Shade Trees—Their Kinds and Care" aims to encourage a wider appreciation of the availability and care of trees.
>
> The remaining articles of the series are:
>
> *Trees for the Roadside*
> *The Making of a Town Forest*
> *Memorial Trees and Groves*
>
> They will point toward the civic possibilities of tree planting and tree care.—*Editor.*

1. The tree must be adapted to the soil and climate. Native trees often have advantages over those from away, but they are not essential. Street trees must grow under peculiarly trying conditions, for, in addition to poor soil packed hard about the roots, they must often withstand extremes of heat and drought, with dust, smoke and trying gases. Accordingly they need to be selected with greater care than if they were to be grown in a park or on a lawn.

2. A shade tree should be relatively long-lived. One is forced to temper his desires with existing conditions, but in so far as possible, when there is a choice between two varieties, the longer-lived one should be chosen. This is not only more economical but it makes for greater happiness. We weave so many pleasant associations around trees that with the years they accumulate a sentimental value that is often beyond appraisal.

3. Street trees should be



These American elms lend an atmosphere of permanence and stability to the homes they shelter.

capable of carrying their heads high to permit traffic to pass underneath. Lawn trees may have branches drooping to the ground, or even a crooked stem, but in all cases there should be symmetry. Here is perhaps the greatest room for choice.

4. Relative cleanliness is an essential element of street trees and should be considered in the selection of all shade trees. Trees whose leaves fall before the end of summer, or whose fruits are slippery or unsightly should not be planted where many people are likely to pass.

5. More and more the problems brought about by the attacks of insects and diseases must be considered. It is practically impossible to suggest trees with no enemies, but one can select trees whose enemies are few and known to be relatively easy to control.

6. Above all, a shade tree should give shade, and should possess those qualities of beauty which permit it to fit into the immediate surroundings. To this end, trees should be selected that hold their leaves throughout the summer, and preferably those that are colorful in the autumn.

Massive, round-headed lawn trees may be less inviting in winter than in summer, but the strength of their bare branches is no less beautiful than the full crown.

Probably no tree would score one hundred per cent on a critical examination based on these points, but a few will score high for certain localities. Each region presents its own peculiar problems, yet there are a few trees that will grow in most parts of the country if given care and water during their early life. The amount of care necessary depends upon the peculiarities of the location. As a rule broad-leaved trees take first place among shade trees, but nearly every region has a few conifers that demand recognition. There is an especial attractiveness about an avenue of white pine, a country lane lined with red cedar, or a street lined with deodars as in Pasadena, California. The southern pines lend themselves less well to individual development, but conifers are susceptible to smoke injury. For this reason evergreens are generally planted in suburban and country areas. In this respect, also, one must not forget the palms, peculiar to the cities of the far South, particularly along the Gulf Coast, and in California.

Each kind of shade tree has its place, and each lends a unique charm to the community it graces. Frequently they cannot be transplanted to another region. The resident of our southern coastal plain must leave his beloved magnolias, live oaks and palms behind when he goes to New York State or Michigan. There he will find new beauty as well as utility in the stately American elm, sugar maple, scarlet oak, basswood, and sycamore—including the European variety, known as London plane tree. A little farther South he may add tulip poplar to his list, as well as red oak, black walnut, sweet gum, pin oak, gingko, and still farther South, willow and laurel oaks. Many of these trees can be encouraged to grow in nearly every region of the country, but that implies occasional cultivation, heavy watering during prolonged periods of drought, and care which is unnecessary where the trees are native.

Farther west where the rainfall is less, he may have to swallow his pride and accept for intimate companions and protectors some trees that the people in the more humid eastern areas scarcely notice. In so doing he will find charm and interest in the cottonwood, hackberry, Chinese elm, Lombardy poplar, thornless honey locust, ash-leaf maple or box elder, and Russian olive.

All through the Great Plains region to the foothills of the Rockies one finds oasis-like plots where owners have planted windbreaks of carefully chosen, broad-leafed trees or shrubs mixed with coniferous trees. Within this protecting wall a surprising growth of trees and shrubs, which would otherwise have perished, has been accomplished. Still farther west, along the Pacific slope is another set of soil and climatic conditions and another group of trees with which to meet them. California walnut, Oregon maple, and several native oaks mingle with acclimated eastern trees along the entire Pacific slope. The exotic eucalyptus, Monterey cypress and pepper trees are characteristic of much of California.

Often native trees fit best into a planting plan, but if this rule were literally held to, many of our most interesting shade trees could not be encouraged. Among the finest of these are the eucalyptus of California, Chinese elm, gingko, London plane, Norway maple, European basswood, and Japanese varnish tree or Koelreuteria.

One may add fertility and water to the soil or drain a wet location; but, fortunately, comparatively few trees rebel to the point of refusing to grow in any fair soil within their climatic range. It is well to remember, however, that the

comparatively shallow-rooted pin oak will prosper in poorly drained locations where sugar maples would languish and where the deep tap-rooted black walnut would have difficulty. Usually one need not go further than the experience of one's neighbors in choosing satisfactory trees, for in every community there are outstandingly successful kinds of shade trees.

Planting has been described in an earlier article. Ordinarily the trees need not be over an inch or an inch and a half in diameter, and not over eight or ten feet high. Larger trees can be secured when immediate effects are desired, but the price which a nursery must charge will be materially greater to compensate for the added years of care and the accumulative investment charges.

Regardless of size, however, the tree should be planted carefully. A hole, large enough to accommodate all the roots should be dug out, and perhaps a foot deeper than appears necessary. Experienced tree planters recommend placing the dirt in three piles, the sod in one pile, the dark-colored soil in another, and all the deep soil, carrying little humus material in another pile. If the planting is on a lawn, the dirt may be piled on a piece of canvas or old sacking. The dark soil may be thrown into the bottom and mixed with barnyard manure, bone meal, or commercially mixed fertilizer. Hold the tree so it will stand about the same height in the ground as it did in the nursery. Pack the dirt firmly around the roots, break up the pieces of sod and put them in. Then finish filling the hole with the bottom dirt. The ground should be thoroughly soaked with water, and during ordinarily dry seasons watering should be continued at frequent intervals. Trees demand more water than most of us realize, for the leaves and twigs are continually evaporating moisture that has to be pumped up from the soil.

Our street trees grow under the most difficult conditions imaginable. It is a wonder they are able to grow at all. They can often be helped by breaking up the soil around their base.

Fertilizer may be applied at the time of planting, but in ordinary locations it is desirable throughout the life of the tree. The artificial surroundings of most shade trees often make it difficult for the tree to secure sufficient nourishment, for no new materials are added from year to year as in the forest. Before automobiles and thickly settled urban or suburban communities were common, an annual top dressing with manure was recommended. There is nothing better than manure, for it helps the lawn as well as the trees, but for most people it is out of the question. For them, the more concentrated commercial fertilizers are useful as well as economical. Plant food in one form or other should be applied every year. The New Jersey Agricultural Experiment Station recommends equal parts of nitrate of soda, acid phosphate, muriate of potash, and ground bone for light soils. Two ounces of this mixed with ten ounces of soil can be applied to every eight square feet of ground surface beneath the tree. For heavy soils they recommend two parts of nitrate of soda, three of acid phosphate, one of muriate of potash, and two of ground bone, to be applied in similar amounts to the soil under the tree. Ten pounds of wood ashes may be substituted in these formulas for one pound of muriate of potash.

The fertilizer may be scattered over the ground beneath the tree, but a larger amount will reach the tree roots if a number of holes, twelve to eighteen inches deep, are made with a crowbar or a post-hole digger in a circle around the tree, just below the ends of the branches, for the range of the roots is comparable to the whole spread of the crown. Into these holes the mixture of fertilizer and soil may be tamped down. If a post-hole digger is used the sod should be taken off first, and replaced after the hole has been filled.

Any such application of "tree food" should be followed with plenty of water. An ordinary surface spray with the hose is not enough. The water should be left on for hours, or perhaps all night, that the ground may be thoroughly soaked.

Equally important with water and fertilizer is the need of keeping the soil loose about the base of the tree. Under forest conditions this is not necessary, and so in parks where the natural state is maintained fertilizing or mulching is seldom required. But wherever the soil has been trampled or packed, it often becomes imperative to break up the ground under the trees frequently. This does not mean that all lawn trees should have the soil dug up around the base, but

under city street conditions the situation may become acute and demand such efforts.

One cannot leave this matter of shade-tree care without warning against the indiscriminate use of fire about their base. Street trees or shade trees growing on the lawns of city homes are seldom subjected to grass fires, but the caretakers of some country homes seem to consider fire necessary to the annual spring clean-up. Under no circumstances should fire be permitted to reach the base of the trees, and it would be far better were it never allowed, for the burning destroys the humus in the soil and injures the grass roots.

A point in shade tree care too frequently overlooked is the desirability of providing understudies for the fine old veterans that seem so permanent a part of the landscape. Even the finest of them are not truly permanent. Often one can foresee with some degree of definiteness that certain trees will be lost within a few years. Where this is the case young trees should be planted nearby. Under these conditions, a large hole for the new tree is especially important. This smaller tree must compete with the larger tree whose roots have filled the earth and whose crown takes up as much sunlight as it can. A large hole with plenty of fertilizer mixed with the bottom soil will help insure vigorous growth in spite of competition.

Under the trying conditions of the Great Plains area few trees compare with the Lombardy poplar as producers of quick shade and an effective screen.

Shade trees need space above for air and sunshine and below for air and moisture. To accomplish this every tree intended for shade should be set in relation to others so there is plenty of room for it to develop. Trees like maples, elms, white oaks and London plane should be allowed to spread out twenty to fifty feet on a side. This means they should not be closer than forty feet apart and preferably further. Occasionally it is wise to cut out intervening trees after they are partially grown. Eventually elms and oaks should be eighty to one hundred feet apart to allow the limbs to spread and the crown to develop its full beauty. City street trees are often crowded by buildings, pavements and sidewalks so they have scarcely any room for the roots to develop.

Again, there is the need of guarding against injury to shade trees after construction operations have been started. Often a deep filling is necessary to establish a new grade. Many people fail to realize that a tree is alive and its upper roots must have access to the air. This applies all the way out to the ends of the feeding roots. They fill in with dirt around the tree several feet deep and are surprised after a year or two to find the tree has withered and died. If the grade must be changed the new earth should be walled back from the butt of the tree by a well and held up by several radiating lines of half tile. Both ends of these tile lines should be left open to permit air to reach the old ground level. This is relatively simple but is so frequently overlooked that many splendid shade trees are lost because the owners do not realize how sensitive trees are to such sudden changes.

We of the present generation can thank the far-sighted vision and thoughtfulness of those who planted the shade trees that we enjoy. They did their work fifty, one hundred, perhaps one hundred and fifty years ago or more. For the most part their names are lost, but the results of their labors continue to grow, giving comfort and joy to all who pass within their sight. If we are to live up to the ideals left by them, we must continue to plant and care for shade trees. Fortunately increased attention to trees has given us more and better planting material to choose from than was available to the early tree planters.

A few books on the care and selection of shade trees are worth mentioning. "Shade Trees in Towns and Cities," by William Solataroff; "The Care of Trees in Lawn, Street and Park," by B. E. Fernow, and "Studies of Trees," by J. J. Levison, were published several years ago and probably are not available in many book stores. "Trees as Good Citizens," by Charles Lathrop Pack, and "Roadside Development," by J. M. Bennett, are more recent books with helpful chapters on this subject. Several state forestry departments have bulletins on shade trees, but none are so generally available as a series of United States Department of Agriculture Farmers' Bulletins prepared by F. L. Mulford. These may be ordered as numbers 1087, 1208, 1209, 1481 and 1482.

Annual Meeting to Feature Nationally Known Speakers

Enthusiastic Gathering of Members of The American Forestry Association at Minneapolis Looms as Greatest Ever Held

ALEXANDER LEGGE, Chairman of the Federal Farm Board, Glenn Frank, President of the University of Wisconsin, Theodore Christianson, Governor of Minnesota, and many other nationally known speakers, among them the foremost foresters and conservationists of the country, are scheduled to address members of The American Forestry Association at the Annual Meeting at The Hotel Radisson, Minneapolis, Minnesota, April 29 and 30 and May 1. The meeting, looming as the greatest in the history of the Association, will probably see a larger gathering than ever before. Discussions will be broader and of more popular interest. Hotel reservations will be made by the Association on request of those planning to attend the convention. Members are also urged to write concerning special railroad rates.

The Program

APRIL 29—TUESDAY

Morning Session, 10:00 A. M.

George D. Pratt, President, The American Forestry Association, Presiding.
Address of Welcome—William F. Kunze, Mayor of Minneapolis.
"The State's Responsibility in Safeguarding Its Natural Resources"—Theodore Christianson, Governor, State of Minnesota.
"Deforested Land—A Challenge to American Welfare"—Nils A. Olsen, The United States Department of Agriculture.
"Conservation and Good Citizenship"—Mrs. Sam A. Rask, President, Minnesota Federation of Women's Clubs.
Announcements.

Afternoon Session, 2:00 P. M.

THE LAND AND FOREST SITUATION IN THE LAKE STATES

"A Close-up of the Lake States' Problems"—Raphael Zon, Director, Lake States Forest Experiment Station.
"What Price Forest Destruction?"—B. H. Hibbard, University of Wisconsin.
"Where the Farm Ends and the Forest Begins"—Alexander Legge, Chairman, Federal Farm Board, or representative.
Discussion.

Evening Session:

Annual Banquet—
Speakers—Stafford King, Chairman, Conservation Committee, American Legion.
Glenn Frank, President, University of Wisconsin.

APRIL 30—WEDNESDAY

Morning Session, 10:00 A. M.

SOLVING THE LAKE STATES' PROBLEMS

"The Answer to Tax-Delinquent Land"—George Bishop, Upper Peninsula Development Bureau, Michigan.
"Federal Acquisition As a Lake States Antidote"—R. Y. Stuart, Chief, United States Forest Service.
"The Next Step in Forest Taxation"—William Mauthe, Chairman, Wisconsin Conservation Commission.
"Private Forestry—Its Possibilities and Handicaps"—W. A. Holt, Oconto, Wisconsin.
Discussion.

Noon:

Minnesota Forestry Association Luncheon—E. G. Cheyney, Presiding.

Afternoon Session—2:00 P. M.

SOLVING THE LAKE STATES' PROBLEMS

"Meeting the Menace of Stream and Lake Pollution"—Paul Hansen, Chicago, Illinois.
"Working Out the Recreational Problem"—Frank A. Waugh, Massachusetts Agricultural College.
"The Place of Game in the Forest Program"—Paul G. Redington, Chief, United States Biological Survey.
"The Power of A Conservation Minded Press"—Albert Stoll, The Detroit News.

MAY 1—THURSDAY

Field Trip to Cloquet—the greatest wood conversion city in the world.

Flying Foresters

(*Continued from page* 201)

cation can be maintained over a distance of 125 miles with its flying base, covers about 1,000 square miles of forest an hour.

In 1927 more than 3,000,000 acres north of Fort Frances, in Ontario, were sketch-mapped from the air by trained foresters. The method employed was the checking of waterways, sketching of forest type boundaries with the species and density, and then applying the sketch to aerial photographs. Poison dusting by airplane of forest insects is undoubtedly carried on in Canada on a greater scale than in any other country in the world. The flying foresters have turned their "puffer" machines on the hemlock looper, caterpillars, and the budworm with remarkable success.

It is true that Canada is fortunate in having a system of lakes that serve as landing places, thus eliminating the necessity of developing airports; but the Dominion has proved conclusively that aircraft is the heart of its forest protection plan. During the forest-fire season of 1929 the area patrolled by the fire planes in Alberta was increased from 3,500,000 acres to 25,500,000 acres. In Saskatchewan planes patrolled 21,250,000 acres. In Manitoba more than 44,500,000 acres were patrolled, an increase of 7,000,000 acres.

While Canada is fashioning great aerial plans and watching them work in the administration of the forests of the North, American foresters are stoutly maintaining that the airplane can never be more than a distant adjunct to their ground forces. As a consequence hardly more than a dozen planes were performing the past season in the interest of forest protection throughout the country.

It matters not whether we believe that airplanes offer a quick way to remedy some of our ailing forest problems, or whether we are content to confine our activities to solid ground. In either event, there must be activity—a remedy. Some power, some development must furnish the germ of progress from which a program will evolve to withstand the demand upon the forests through countless years. It may be an undreamed-of system of ground operations, or it may be an aerial plan—what does it matter which?

The thing that does matter is that fire still throws terror into the heart of mankind, that deplorable forest conditions still exist in many sections of the country, that billions of dollars are being needlessly destroyed that should be fattening the vaults of our treasury, or building institutions of learning, or improving and extending our national highways.

It does matter if American foresters lean toward the static rather than the dynamic, if they do not move forward to the extent of their opportunity. It matters if they do not meet changing conditions; it matters if they cease to serve to the limit of their capacity.

The world has entered a new age—the aerial age, where the tanklike Tyrannosaurus has become a Butterfly. It is an age where minutes have been turned into seconds, hours into minutes; an age where there is no opportunity to stagnate and still exist. Thus it would appear that if the forestry movement is to serve its real purpose, the men behind it cannot afford to plod along with the Tyrannosaurus. They must accept the wings of the Butterfly.

Conservation or Departmental Jealousy—Which?

(*Continued from page* 212)

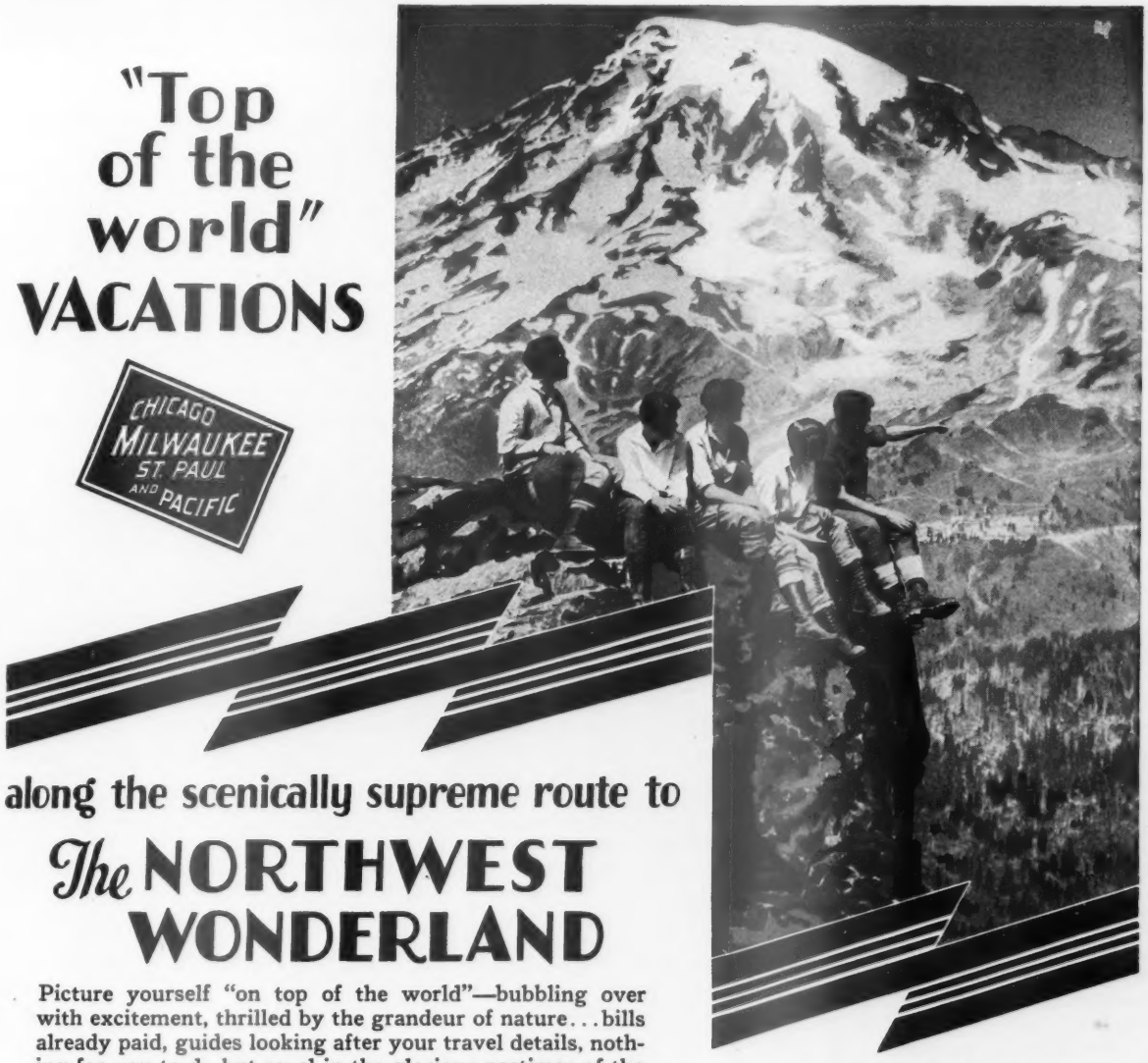
years of failure to secure even the authority to regulate and conserve the grazing and watershed values on the Public Domain, is to divest itself completely of this responsibility by granting this domain to the states. Equally valid and cogent reasons could be cited for making a similar disposition of the National Forests and of the mineral resources on the Public Domain.

The administration of the Public Domain and of the National Forests are intimately bound up with great national land economic problems on which the future prosperity of agriculture and industry depends. It cannot be divorced from problems of production and use, which need the coordination and control of agricultural economists. Witness the remarkable phenomenon of the Reclamation Service of the Department of Interior urging the passage of Senate Bill 412 which contemplates the expenditure of large sums for the clearing and improvement of cutover forest lands in Southern States for subsidized colonization by farmers, a project which runs counter to universal opinion of land and agricultural economists, who favor reduction and not increase in submarginal agriculture. It is the firm belief of the writer that the ideals of the subordinates who make up the administrative rank and file of the Department of Interior in its relation to public lands have not changed in twenty years and that no Secretary of the Interior, whether he be a Wilbur, a Work, a Fall, or Ballinger, will be able to effect such needed transformation.

The transfer of the National Forests to this Department would in my opinion result immediately in partial dismemberment, and in a short time would so lower the efficiency and ideals of the Service that no effective resistance could be put up against encroachments of grazing and other interests intent on benefiting at the expense of the public from the unregulated exploitation of the national resources. Such a result must be prevented at all costs. The "New Conservation" as advocated in the *Saturday Evening Post* of December 7, 1929, by Honorable Joseph M. Dixon, Assistant Secretary of the Interior, must not begin by dismemberment, first of the public lands, and next of the Forest Service and the National Forests.

"Top of the world" VACATIONS

CHICAGO MILWAUKEE ST. PAUL AND PACIFIC



along the scenically supreme route to

The NORTHWEST WONDERLAND

Picture yourself "on top of the world"—bubbling over with excitement, thrilled by the grandeur of nature...bills already paid, guides looking after your travel details, nothing for you to do but revel in the glorious pastimes of the great vacation lands.

That's a vacation! Gone are all thoughts of care and routine. The folks with you become companions of the type you like. A dozen times you think how marvelous is this new, carefree, escorted, all-expense tour idea—just like a happy house party.

And so many places to go, so many things to see, so much to do...each day more marvelous than the other. There is Yellowstone through the thrilling new Gallatin Gateway (170 mile motor trip without added cost), Inland Empire (Spokane), Rainier and its mighty glaciers, Seattle and Tacoma, world ports, Olympic Peninsula, America's last frontier, Puget Sound cruises to old-English Victoria and Vancouver, challenging Mt. Baker. And your tour can include Alaska, Canadian Rockies, California or Colorado.

You can travel for a fortnight, all expenses paid, for as little as $250 from Chicago. Other tours, 10 days to 3 weeks, $145 and up. Let us tell you in detail about "Top-of-the-World" vacations.

The MILWAUKEE ROAD

Electrified over the Rockies to the Sea

World's longest continuous electrified ride

on the new *Olympian*, only transcontinental roller bearing train, over America's longest electrified railroad—656 spectacular mountain miles, electrified, smokeless, sootless, cinderless. By daylight over the Belts, Rockies, Bitter Roots and Cascades.

Mail THIS Coupon

Geo. B. Haynes, Passenger Traffic Manager
The Milwaukee Road, 724 Union Station
Chicago, Illinois

Send me full information about tours to ☐ Yellowstone; ☐ Inland Empire (Spokane and Lake Region); ☐ Rainier National Park; ☐ Puget Sound Country; ☐ Olympic Peninsula; ☐ Alaska; ☐ Black Hills. ☐ Escorted all-expense tours.

I have.....days vacation and about

$.....to spend.

Name.....

Address.....301-33

Department of Science Education

Conducted by ELLIS C. PERSING

Natural Science Department, School of Education, Western Reserve University

How Teachers May Use Current Articles in This Magazine to Supplement Nature and Science-Study Textbooks Will Be Outlined in This Column Each Month by Professor Persing

THE suggestions for using the articles in this magazine will be given in a form that can be used directly by students and teachers in the upper elementary grades, the Junior High School and Senior High School. It is not our plan to displace textbooks in any field of subject matter but merely to suggest supplementary reading and visual materials which will enrich the present course and relate it to the experiences of the pupils.

Elementary School

Hiking—"The Lost Lake," by G. E. Bentley (see page 213). You have probably read about people being lost in the forest. Here is a thrilling story of adventure. Six boys go in search of Cheney Lake. They soon realize they are lost. You will want to read this article.

1. What did the boys accomplish on this trip?

Birds—"Winged Whiteness," by Rachel M. Hutchinson (see page 202).

If you like birds, especially unusual birds, read and study this story.

1. How do these birds compare with mocking birds you have seen?
2. Are albino birds as versatile musicians as other mocking birds?

AMERICAN FORESTS AND FOREST LIFE is offering prizes of $50, $25 and $10 for the best suggestion embodying a detailed lesson plan and outlining how the magazine can best be used in the schools. The purpose of the contest is to aid teachers to enrich their pupils' knowledge of trees, forests, and related outdoor fields through supplementary reading and the use of visual material in the schools.

The contest is open to all teachers from grades one to twelve. The closing date is June 1. Teachers are urged to write now for details, or turn to page 242 and read the rules of the contest carefully.

Wild Life—"Chipmunk Isn't a Good Forester," by D. S. Olson (see page 209).

Here is something new about the chipmunk. The next time you go into the woods watch what he is doing.

1. How does the chipmunk gather and bury forest seeds?
2. Why isn't he a good forester?

Junior High School

Lumbering—"The Drive Is Coming Down," by Stewart H. Holbrook (see page 195).

Have you ever wondered how the logs are taken from the forests to the sawmills? This article is a thrilling story of the log drives in New England thirty years ago, and you will want to read it in connection with the study of lumbering.

1. How was the approach of the drive heralded?
2. Why were men stationed at the bend in the river?
3. What was the "wangan"?
4. How had the men prepared the logs for the drive?
5. Describe a log jam.

Forest People—"A Trailer of the High Sierras," by Juliette Mouron Hood (see page 220). Can you think of a reason why Louis Jensen would want to climb eighty-three mountain peaks?

1. Why did Louis Jensen resolve to live among the big trees?
2. How did he gain an acquaintance with them?
3. What has the Danish Government done for him?

Conservation—"Soil Erosion in the West," by Arthur E. Morgan (see page 204).

In connection with your study of the importance of trees to man you will want to read this interesting article.

1. Why are some of the great reservoirs being filled with silt?
2. Why did pasturing of cattle in the West increase soil erosion?
3. What are some temporary ways of checking erosion?
4. What plan is proposed to control a stream?
5. Why does this problem demand immediate action?

Shade Trees—"Shade Trees—Their Kinds and Care," by G. H. Collingwood (see page 225).

What shade trees do you like best? Can you tell why? Do you help to take care of the trees about your home? Here is an article that will help you to learn more about trees.

1. What things go to make a good shade tree?
2. Tell how to plant a tree.
3. How should fertilizers be applied?
4. What are some other ways to care for trees?

Trees—"The Story of Evangeline," by Georgia Williams Moritz (see page 207).

Do you know the story of Evangeline? Perhaps you wonder what that has to do with trees? What is the story as Judge Voorhies tells it? How does it differ from Longfellow's poem? What efforts are being made to keep the Evangeline Oak alive?

Senior High School

Forest Fires—"Forest Fires," by John C. Gifford (see page 216).

Perhaps you can suggest ways for preventing forest fires. Here is data for you to consider in thinking through this problem.

1. What will happen unless the forest fires are checked in the southeastern United States?
2. How will the ownership of land help prevent forest fires?
3. Why do we need a forestry conscience and a land conscience?

Airplanes and Forest Fires—"Flying Foresters," by Erle Kauffman (see page 198).

If you are interested in airplanes or forests you will enjoy reading this article and looking at the pictures.

1. What are the advantages of using airplanes to discover fires?
2. What other use will foresters make of airplanes?

Grand Canyon and Great Fall

Yellowstone Park

A Fairyland of real wonders, where Nature pools her phenomena and thrills within one National Park—mountains, geysers, canyons, lakes, hot springs, forests, Gardiner Gateway, Cody Road, innumerable wild animals. Restful accommodations.

Vacation Albums are published on: 1—Yellowstone Park; 2—Alaska; 3—Pacific Northwest; 4—Dude Ranches. To those planning Western travel, one or more of these books will be promptly mailed upon request to E. E. Nelson, 222 N. P. Bldg., St. Paul, Minn.

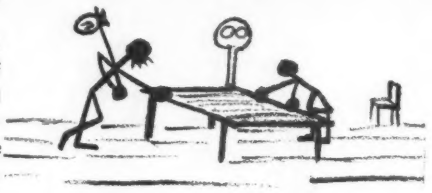
NORTHERN PACIFIC
YELLOWSTONE PARK LINE
6t9

A NEW Train for Summer Travel West—the

North Coast Limited

Looking for Side-Door Pullman

You foresters who are always being mistaken for organizers for some kind of a "woodsmen's" lodge needn't feel so much insulted. Listen to this:



A hobo crowded up to the desk of the Travelers' Aid Society in Indianapolis the other day with the query: "Say, lady, if you're de Travelers' Aid Society, where's de freight yards in dis town?"

Changing Nature

Congressman Otis Wingo's attempt to make a National Park out of a National Forest by law down in Arkansas can't be so far different from the dear old lady's viewpoint when the surveyors found that her farm on the border was in the United States instead of Canada.

"I've always heard," she sighed with relief, "that the climate was too cold in Canada."

More About the Millennium

"Can't say about the lion and the lamb," muses the *Anaconda Standard*, "but there are times when the elephant seems disposed to lie down with the wild jackass."

Notes on the Ranger's Friend

"The horse population in Wyoming is 147,988, while the number of automobiles is only 56,698," says a recent press dispatch which recalls that well-deserved bit of sales talk on the one-cylinder hay-burner as follows:

"The horse is an automotive animal, consisting of a body mounted on four brake legs. It has three speeds forward; namely, the walk, the trot, and the gallop. The intermediate gear is not so popular owing to the vibration. The horse may also go into reverse, or stand still in neutral.

"The engine of the horse is in the center of the body and the driver sits on the hood. In the rear of the driver is room for a rumble seat, though this is not featured in the more recent models. The horse has a tail but no tail-light; thus distinguishing it from a motor car, which has a tail-light, but no tail.

"It is always well, before starting out on your horse, to see that he has been fueled and has sufficient water in his radiator. There is no need to worry about oil, as he supplies his own lubrication.

"Horses may be had in numerous styles, to fit every purse and to serve widely varied purposes, with bodies of attractive tones."

Seven-League Boots?

Commenting on some answers found in patrolmen's examination papers, the *Smoke Screen* inquires:

"Why use an automobile when the standard pace is one hundred feet? A fellow should be very careful, though, when pacing for he might step across a small fire without seeing it or if he should forget to mark up a couple of tallies he might find himself A. W. O. L. in the middle of an adjoining Ranger District."

OUTDOOR BAD MANNERS

There's grandeur in the mountain's rugged face,
Fantastic patterns never shaped by man—
Naught but the gods could do this wondrous thing;
But who, oh who left that tomato can?

I see the rippling stream, cold, clear and swift,
Leaping and bounding over crystal rocks—
I stoop to taste its nectar and I see
Two bottle tops, a shoe, an old lunch box.

Why spend a million years to build a world,
To mold it, shape it, give it tone and punch,
When one poor, thoughtless picnicker can spoil
The whole shebang with what is left from lunch?—*Detroit News.*

Stone Age Stuff

The *University of California Forester* doesn't seem to think that any trees ever became petrified through fear of men and fires. "The real cause," it whispers, "is the breeze that makes them rock."

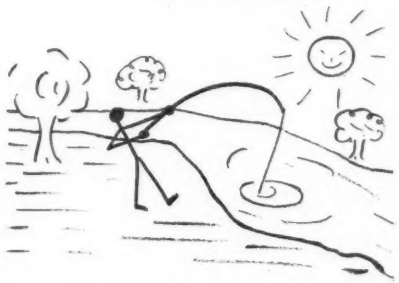
Look Out, You Fire-Bugs!

"What dey do to dat Jones boy fo' sellin' dat booze, Aunt Liza?"

"What dey do? Lawd chile, dey done give him two yeahs in de house of representatives!"—*Kreolite News.*

No Rest for Him

"I believe," said the impatient man, as



he put aside the telephone, "that I'll go fishing."

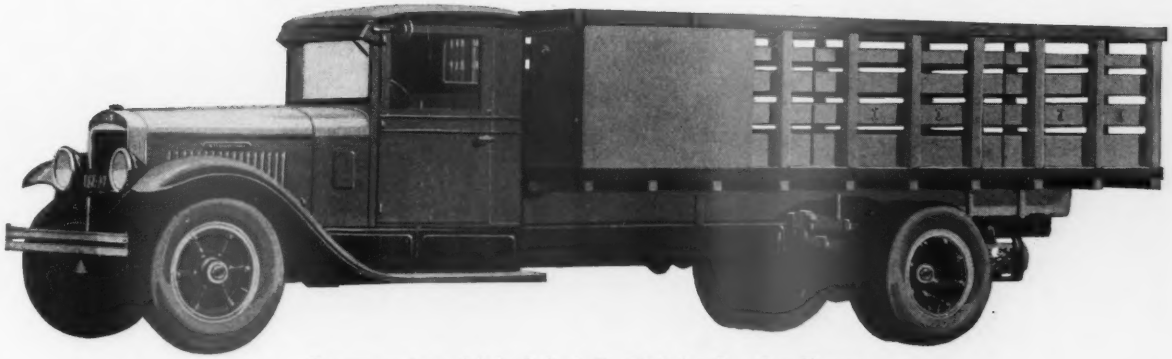
"Didn't know you cared for fishing."

"I don't ordinarily, but it's the only chance I have of finding myself at the end of a line that isn't busy?"

* * * *

Yes, and I know a lot of places where he'd get an old shoe or a snag just as soon as he threw in his hook.—*S. S.*

Brand New!



International Model A-5, 210-inch wheelbase, with stake body and fully-enclosed cab

A 3-Ton 6-cylinder Speed Truck

HERE is the new 3-ton, 6-cylinder, International Speed Truck—Model A-5—now ready for inspection by lumbermen at any of the 180 Company-owned branches in the United States and Canada.

Sponsored by 26 years of automotive achievement, this latest member of the International line of trucks is definitely designed to provide a wide range of hauling in the lumber industry—from logs to finished wood products—either as an individual unit or with trailer attached.

Read the specifications given at the right and you will have an idea why this great performer is winning the praise of lumbermen who know their trucks. The power of its big 6-cylinder engine is carried through a 5-speed transmission to sure-footed duals. And 4-wheel brakes make it easy to control the A-5 under any load and under all operating conditions.

See the new A-5 at the nearest International branch—then ask for a demonstration of its prowess on your own job.

Brief Specifications of Model A-5

Wheelbase: 156, 170, 190 or 210 inches.

Engine: International design and manufacture; 6-cylinder, valve-in-head, 7-bearing crankshaft, 7-bearing camshaft, removable cylinders; 3-point mounting with rubber-cushioned rear supports; pressure lubrication.

Clutch: Single plate, with built-in vibration damper.

Transmission: 5 speeds forward, 1 reverse, direct in high; one control lever.

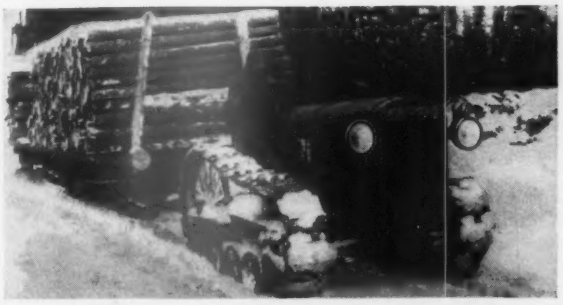
Final Drive: Spiral bevel gear type.

Frame: Pressed-steel channel type, with deep middle section.

Springs: Semi-elliptic, front and rear. Auxiliary springs, quarter-elliptic.

Tires: 34 x 7 front, 34 x 7 dual rear, pneumatic, mounted on all-steel, spoke-type wheels.

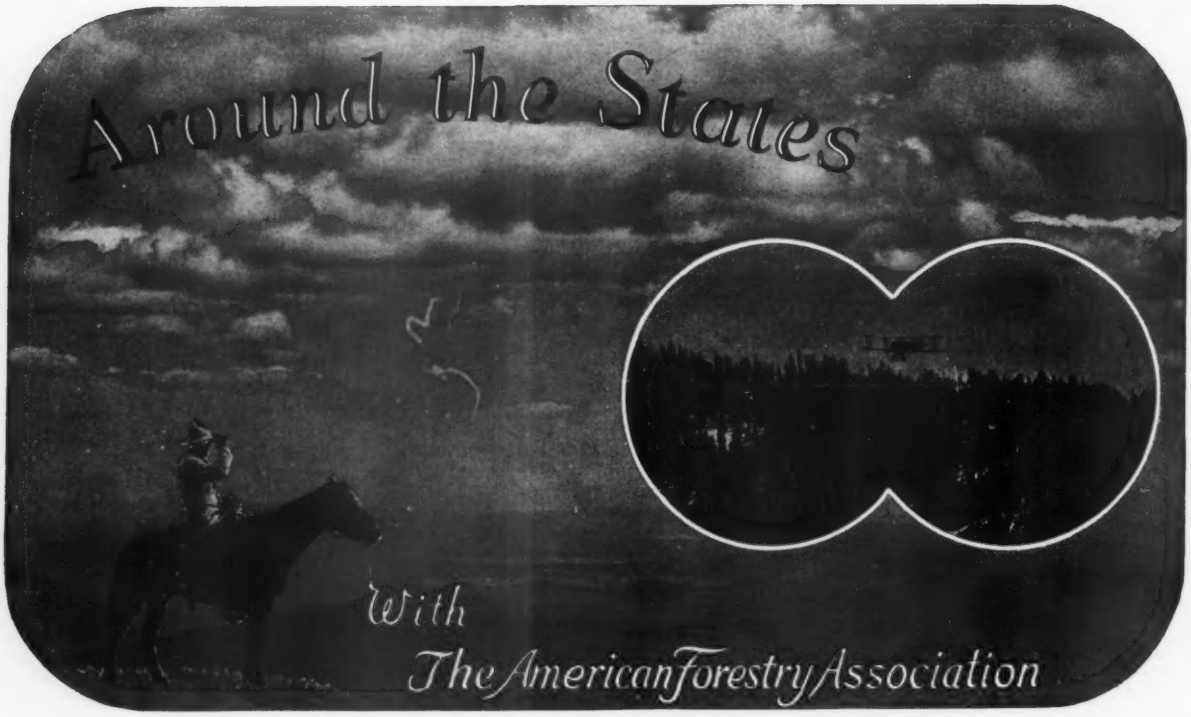
Brakes: Service, 4-wheel mechanical, internal expanding. Emergency, internal expanding on rear.



McCormick-Deering Industrial Tractors have a wide range of usefulness in the lumber industry. The above scene shows a McCormick-Deering hauling a load of ties. They furnish power galore for woods operations—they have great flexibility to combine with various equipment. They are at home in sawmills, woodworking plants, retail yards, and wherever lumber is handled.

INTERNATIONAL HARVESTER COMPANY
606 So. Michigan Ave. of America (*Incorporated*) Chicago, Illinois

INTERNATIONAL TRUCKS



Public Land Value Has Decreased, Oregon Committee Rules

President Hoover's proposal to cede surface rights of the Public Domain to the Public Domain states should not be considered either by Congress or by the states on the basis that such cession would be a valuable gift or a recompense to the states for their loss in taxable wealth through withdrawal of public lands, but only as a release of land which the government itself has permitted to retrograde until its value is only potential, it is stated in a report by a subcommittee of the Oregon general land conference.

Under government control there has been no regulation of grazing privileges on these lands, the report states, and the forage grasses have been so overgrazed that the lands now are capable of supporting only a fraction of the number of head of livestock that once subsisted upon them.

The committee expresses the opinion that a grant of the lands to the states without mineral reservation is a less desirable alternative than government retention with regulation, but in the absence of any proposal that the government itself will take regulation in hand the states could make a measurably profitable use of the lands.

The purpose of the report is to provide E. C. Van Petten, the representative of Oregon on the President's Commission, with a cross-section of public opinion as to the President's proposal.

The report also voices the opinion of the Oregon subcommittee that the National Forests should be retained under federal administration, but that the present allocation of twenty-five per cent of timber sale proceeds is wholly inadequate to compensate the State for the loss of taxable wealth occasioned by the government's withdrawal of these lands from individual acquisition.

W. R. BROWN

Vice President of The Brown Company, of Berlin, New Hampshire, and recently re-elected to the Directorate of The American Forestry Association.

The committee also believes that all public land matters should be consolidated under one department and it believes that because the Agricultural Department has erected the larger detailed machinery, land matters should be placed under the Secretary of Agriculture.

Cumberland Falls to Become State Park

The Kentucky Legislature has passed over Governor Sampson's veto a bill providing for acceptance of the offer made by former United States Senator T. Coleman duPont, of Delaware, to provide funds for the acquisition for State park purposes of an area of 2,200 acres at Cumberland Falls. Opponents of the bill maintained that a better offer has been made by power interests which have applied to the Federal Power Commission for a license to construct a hydro-electric power plant above the falls.

The State Legislature also passed over the Governor's veto a companion bill relating to the duPont offer, empowering the State Park Commission to acquire property for State Park purposes by the exercise of the power of eminent domain when so directed by the general assembly.

In his veto message Governor Sampson said that the measure "appears to be clear invasion of the constitutional limitation which was intended to prohibit and does prohibit the general assembly from passing local and special legislation.

"The bill specifically sets out the land to be purchased, location, area and price, but does not show that the area, or any part of it, is now owned or held by the Commonwealth, the fact being that all this Cumberland region belongs to private individuals and corporations and not to the State," he said.

(Sixth of a Series of Practical Forestry Discussions)

Evolution, Not Revolution In Forestry

A NATION-WIDE system of practical forest conservation supplying the present, and insuring the future, forest requirements of the country is earnestly desired by all thoughful Americans.

The importance of our forest problem is emphasized by the numerous and often conflicting plans which have been proposed for its solution. That some of these plans are marked more by enthusiastic idealism than by practical confrontation of facts and that they propose extravagant and revolutionary measures to attain simple economic objectives serve only to impair the support and impede the orderly progress of the sound programs already under way.

Judicious students of our forest problem attempt to deceive neither themselves nor the public into believing that there is any quick solution. It must be frankly recognized that we are dealing with a steadily moving evolutionary development for which there is no miracle-working tonic.

The lumber industry is most intimately concerned with forest perpetuation, because the forests are the source of its raw materials. Now that increasing dependence for timber supply must be placed upon second growth, and cut-over lands are no longer in demand for agriculture, the practicability of reforestation—of growing new timber crops—and thus keeping its lands so far as possible in profitable economic use, becomes to the industry a matter of constantly increasing interest and importance.

Consequently it is earnestly supporting public and private measures intended to clear the way for the expansion of commercial forestry to the limit of its economic possibilities, and for the conversion to public ownership of forest areas which will thus best serve national interests.

The National Lumber Manufacturers Association invites all practical forest conservationists to unite in pushing to full fruition a sound and intelligent National Forestry Program, based on unbiased interpretation of determined facts and open to improvement in accord with new knowledge as it comes to light.

As an aid to that end, the Association calls attention to the Statement of Policy and Forestry Program adopted by its Board of Directors at their recent meeting in Longview, Washington:

Forestry Program of the National Lumber Manufacturers Association Summarized

1. Intensive campaign to encourage every commercial forest owner to study carefully the economic timber-growing possibilities of his properties.

2. Encouragement to forest owners to study the economic advantages of selective logging and sustained yield methods and to apply them wherever practicable.

3. Expert advice to individual forest-land owners and to regional lumber manufacturers' associations to stimulate and direct forest economic studies of individual forest-land properties.

4. Acceleration of cooperative activities under the Clarke-McNary and McSweeney-McNary Federal acts to eliminate methods of oppressive taxation, to extend effective protection against fires, to improve standards of wood utilization and to advance sound economic practice in forest conservation and replacement.

5. Development of plans for stabilization of the lumber industry and the orderly control of production.

6. Coordination of sales of Federal and State Forest timber with the activities of owners of adjacent private forest property.

7. Larger appropriations for the protection of National Forests.

8. Expansion of Federal State and Municipal forest ownership.

9. Permanent reproductive administration of the Indian Reservation forests.

10. Education of the public to a more intelligent utilization of lumber and other forest products, and encouragement of public and private research in the utilization of logging and sawmill by-products and diversification of wood uses.

For copy of the full Program, write the

National Lumber Manufacturers Association

WASHINGTON, D. C.

Made with a Leica

Only an Exceptional Camera can do this—

A SUDDEN flash out of a darkened sky — and the Leica records it with astonishing clarity and fidelity.

Here is a camera of true scientific precision. Mechanically and optically perfect. Its famous Elmar Anastigmat F 3.5 lens insures clear, sharp negatives under all conditions of light and weather. Ideal for snapshots, portraits or photo-micrographic work.

If you want better pictures this Spring and Summer take a Leica wherever you go. Weighs less than a pound and fits vest pocket or purse. Each roll of standard cinema film gives 36 pictures, double frame size. And enlargements to 12 x 18 inches or more retain and amplify the smallest detail.

See this unusual camera at any high grade photographic supply store. Or, if you prefer, send the coupon for illustrated catalog No. 1166. E. Leitz, Inc., Dept. R-1, 60 East 10th Street, New York, N. Y.

E. LEITZ, INC.,
Dept. R-1, 60 East 10th St.,
New York, N. Y.

Please send me catalog No. 1166 describing the Leica Camera.

Name.....

Address.....

Fits Vest Pocket or Purse

Weighs Less Than a Pound

Hine Named Secretary of Society of American Foresters

W. R. Hine, former state forester of Louisiana, and more recently in charge of the cooperative activities of the United States Forest Service in the Southern States, has been appointed executive secretary of the Society of American Foresters. He will make his headquarters at Washington, D. C.

Mr. Hine's appointment is the culmination of a drive started several years ago to place the Society in the position of more aggressive leadership. The new secretary is a graduate of Cornell University.

Mammoth Cave Designated as National Park Site

Mammoth Cave, in Kentucky, will become the site of a National Park as the result of the signing by Governor Flem D. Sampson of a bill passed by the legislature providing for an appropriation of $1,500,000 for the purchase of 71,000 acres of land and caverns. This will complete the sum of more than $2,500,000 necessary to buy all the lands, including the original Mammoth Cave property and the various other great cave systems in that region.

California Cities Maintain Camps in National Forests

Thirteen municipal camps are maintained on the National Forests in California by cities of that state in cooperation with the Forest Service of the United States Department of Agriculture. The use of the land occupied by the camps is furnished free of rental charge by the Forest Service; the improvements are maintained and the camps operated by the municipalities without profit for the benefit of their citizens. Because the guests take part in the operating activities, a vacation in one of these camps may be had at a cost of about $1 a day, exclusive of transportation.

Guests are housed in well-ventilated cabins or tent houses furnished with cots and mattresses. As a rule, there is daily mail service. Stores and libraries are maintained, and a trained nurse is on duty at each camp. Pack trains or hiking trips and nature-study hikes are arranged by the camp staff. Nearly all the camps have swimming pools as well as athletic fields. Each day ends with a camp-fire entertainment put on largely by the guests.

Where the demand for admission to the camps is heavy, guests are usually limited to a stay of two weeks. Some camps provide for family parties, some for organizations such as the Boy Scouts and the Camp Fire Girls. Some designate certain periods for family parties and other periods for different organizations.

$200 in Prizes for Outdoor Photographs

The American Forestry Association, in announcing its Prize Contest for Outdoor Photographs, invites everyone in the United States and Canada, whether a member of the Association or not, to compete for the $200 in cash prizes and other awards. Since one of the purposes of the Contest is to bring to light unusual photographs, the Association will accept several hundred photographs at regular rates in addition to the prize-winning photographs.

Any outdoor subject will be considered—trees, forests, reforestation, lumbering, wild life, hunting, fishing, exploration, and other phases of forest and tree life.

The Contest opens January 1, 1930, and closes at midnight October 1, 1930. Send in winter subjects now and follow up with spring and summer subjects. There is no limit to the number of photographs a contestant may submit.

PRIZES

First Prize	$100
Second Prize	50
Third Prize	20
Fourth, fifth and sixth prizes each	10
Seventh, eighth, ninth, and tenth prizes, each one year's subscription to American Forests and Forest Life.	

RULES OF CONTEST

The name and address of the photographer must be printed on the back of each photograph.

Enclose with each selection of photographs sufficient postage for return if not available. Unavailable photographs will be returned as soon as rejected by the judges, irrespective of closing date of the contest.

While every possible care will be taken, The American Forestry Association cannot be responsible for any photographs that may be lost through the mails or in handling.

Photographs previously published or sold to other magazines, newspapers, or periodicals cannot be considered. Upon the award of a prize or payment for a photograph, the contestant surrenders all publication right to The American Forestry Association.

Do not submit negatives as they will not be considered.

Address all photographs to the *Prize Contest Editor, The American Forestry Association,* Lenox Building, Washington, D. C. Unless so addressed, photographs will be handled as regular material.

Maryland Forestry Association Meets in Baltimore

The annual meeting of the Maryland Forestry Association was held in Baltimore, February 27. The meeting was presided over by the newly elected President, Henry Holzapfel, of Hagerstown, Maryland. The program included a report by Mrs. James H. Dorsey, secretary and treasurer, and an illustrated talk on roadside possibilities by John W. Keller, Highway Forester of the Pennsylvania Department of Highways.

Mrs. Dorsey reported that the Maryland Federation of Women's Clubs has raised more than $300 with which to assist the state in the purchase of state forest lands. These lands will be added to the recent purchases reported by State Forester Besley, amounting to more than eleven thousand acres.

The officers for the coming year are: Henry Holzapfel, president; Mrs. E. C. Bouton, Standley Evans, Miss Esther L. Cox, Oliver Metzerott, Mrs. William J. Starr, vice-presidents; and Mrs. James H. Dorsey, of Baltimore, secretary and treasurer.

Biltmore Forest Study

One of the earliest large-scale reforestation projects under private initiative in this country, according to the United States Forest Service, is that of the Biltmore Estate near Asheville, North Carolina. Planting and seed-sowing operations were begun there about forty years ago and the work was continued until about 1911. The resulting stands present an excellent opportunity to study the problem of forest planting with a large number of species in this part of the southern Appalachian region.

A study made by the Appalachian Forest Experiment Station of this project discloses the suitability of northern white pine for planting in this region, and also the desirability of planting native yellow pines in mixed stands. Norway spruce gave good results. It was demonstrated that close spacing is not justified unless the planting is followed up with systematic thinnings.

These projects are described in Miscellaneous Publication Number 61, of the Department of Agriculture, entitled "Forest Plantations at Biltmore, N. C."

Wood Utilization Meeting in May

The National Committee on Wood Utilization of the Department of Commerce will hold its annual meeting on May 2 at Washington, D. C. Secretary of Commerce R. P. Lamont will deliver the opening address. While the general subject for discussion at this meeting will be the projects of the Committee, special attention will be devoted to its activities in the building and construction field.

They Leap to Your Bait

in the untamed fishing paradise of Maine's lakes and streams.

Here they fight for a chance to be fried over a campfire in the pine woods of Maine's great outdoor pleasure ground—Aroostook Country.

If the lure of sparkling streams teeming with bass, pickerel, perch, speckled trout, salmon—big fellows, full of kick and play—if these and sunshine, pure air, and pine woods tempt you—send 10 cents now for 160 page magazine, fully illustrated. Tells all about it, how to get there, what it costs. Write now to Passenger Department, 52 Graham Bldg., Bangor, Maine. (130)

Bangor & AROOSTOOK Railroad

A. E. WOHLERT — The GARDEN NURSERIES Narberth, Pa.

Oriental Flowering Trees

America's Finest Collection

Japanese Rose Flowering and Weeping Cherries, Flowering Crabs; in all varieties and sizes. Send for free book with color illustrations.

A. E. WOHLERT
930 Montgomery Avenue
Narberth, Montgomery Co., Pa.

Read About the SIBERIAN ELM

The newly discovered wonder tree of rare beauty and rapid growth

The photograph shows a Siberian Elm only 5 years from planting a whip. This beautiful shade tree grows virtually twice as fast as the Maple and American Elm.

THIS home shade tree offers quick results. It develops the full shape of the Norway Maple, with rich, green, clean-cut foliage, at an astonishing rate of growth. It grows twice as fast as the Maple and American Elm.

The Siberian Elm will thrive under conditions of soil and exposure that would prevent other shade trees from thriving. It will stand intense cold and heat. It will flourish in "poor soil."

If you want to have lovely shade trees about your home—if you want to have a tree-lined street—if you want to increase the value of bare lots by surrounding them with fine shade trees—the Siberian Elm offers a new way. With this remarkable tree you will not have to wait years for results. You will experience the pleasure of seeing a whip turn into a tree the very first year.

Here is what the U. S. Department of Agriculture says about the Siberian Elm:

"It is very hardy and has proved valuable under a greater variety of climatic and soil conditions than any tree yet introduced. Very favorable reports have been received from practically every section of the country."

PRICES (*Delivered*)

5 foot Trees
1 tree....$2.50
3 trees...$7.00
10 trees..$20.00

6 to 8 foot Trees
1 tree....$4.00
3 trees..$10.00
10 trees..$30.00

If you prefer a fully prepaid shipment add ten per cent to the above prices for delivery.

EVERY TREE GUARANTEED TO LIVE

Any Guild Tree which fails to flourish will be replaced without cost to the planter within six months.

MAIL THIS COUPON FOR A TRIAL TO

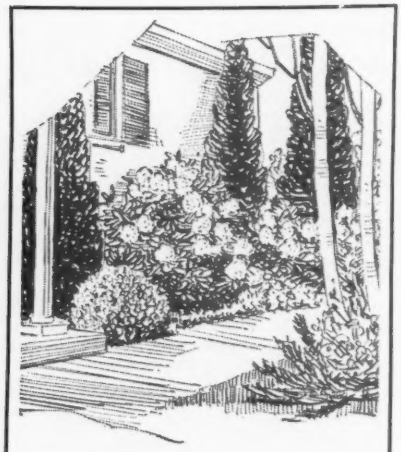
THE LIVING TREE GUILD, Dept. 34,
468 Fourth Avenue, New York, N. Y.

You many send at the right time for planting ..... Siberian Elms, size ..... If my check is not enclosed, you may deliver C. O. D.

Name .....

Address .....

City .....State.....



Rare Floral Gems

From the Blue Ridge Treasure-Gardens

FROM the fertile valleys that nestle among the Blue Ridge Mountains you can now obtain nature's loveliest wildings. In addition to these, the hardier plants native to the rocky, exposed slopes can be supplied in quantity from my nursery.

Lovely Native Flowering Shrubs

For many years I have been propagating gorgeous **Kalmias** and **Rhododendrons,** spring-flowering Mountain Andromeda, the dainty Leucothoe, and many other shrubs and plants native to this mountain region. I can supply nursery-grown seedlings and rooted cuttings as well as heavy transplanted clumps.

Many unusual plants—Orchids, Trilliums, Lilies, and Bog Plants —are available in large or small quantities.

To all who are interested in plants from the Mountains, I shall be glad to send a copy of my spring catalogue of shrubs, vines, broad-leaved evergreens, bog and aquatic plants and lilies. Will you not write and tell me in what plants you are interested?

E. C. ROBBINS

Gardens of the Blue Ridge

P. O. Box 9

Ashford, North Carolina

Warns Against Inferior National Parks

Frederick Law Olmsted, Chairman of the Committee on National Parks and Forests of the American Society of Landscape Architects, in the annual report of his committee for 1929 stressed the danger of including in the National Park system areas lacking in qualities that justify their creation as National Parks. The committee's report mentions specifically the bill passed by Congress last winter creating the Ouachita National Park in Arkansas. This bill was passed against the advice of both the Park Service and the Forest Service, but failed to become a law because of a pocket veto by President Coolidge.

"There is great danger that these and other such projects will be renewed and pressed at this winter's session of Congress," Mr. Olmsted's report points out, "and the society should be prepared to stand firmly against the tendency, which such bills indicate, toward a new and dangerous policy in the creation of National Parks, one concerned with regional needs rather than with proper national purposes.

"A National Park normally confers some special benefits upon that region of the country in which it is situated, different in kind or degree from the benefit which it confers on the rest of the nation. The present locations of National Parks certainly do not distribute these special regional benefits equitably in relation to population. But we hold that these more or less inequitably distributed special regional benefits are purely incidental to the national purpose of the parks and that it is no proper business of the federal government to equalize them. We hold that the only real justification for a system of National Parks is that there are in widely scattered parts of the country, wholly unrelated to the distribution of population, certain natural areas of such scenic grandeur or otherwise of such extraordinarily outstanding value for park purposes to the people in all other parts of the country, that the latter cannot afford to take the risk that these nationally notable areas will be destroyed through failure of the people who live near them to assume locally or regionally the burden of protecting them and opening them to the public.

"Such areas occur in few and very unevenly distributed regions, and most of the population of the country chooses to live, for excellent reasons, in regions from which most of these nationally unique, scenic areas are necessarily remote. It is indeed the very fact that most of the people to whom these nationally unique areas are of deep concern, and who are willing to pay the price of preserving them, do live remote from them and cannot effectively act for their preservation through agencies of the states in which the areas are situated, which alone justifies federal action.

"This ociety is keenly awake to the immense need of preserving as public parks, for the convenient enjoyment of the people of every region in the United States, the best areas locally available for such use, whether these are or are not so notable as to attract people from distant parts of the country. But for the national government to get into the business of meeting these local and regional park needs instead of leaving them to state agencies would not merely be contrary to the general principles of our federal government and an invitation to the worst kind of log-rolling and pork-barrel politics, but would inevitably divert federal initiative and federal funds from the effective pursuit of the essentially federal objective of preserving and protecting in perfection the limited number of areas which are really of outstanding national importance."

New York Has Big Year

A total of 25,305,000 trees, an increase of 3,000,000 over last year, were planted in New York State during 1929. This is the largest number of trees ever planted by the State in reforestation projects in any one year.

Within six months of the enactment of the Hewit Law the Conservation Department had acquired more than 6,000 acres of land, in areas of 500 or more contiguous acres, and the first plantations were made on these, during October, in Cortland, Chenango and Otsego Counties. Under provisions of the new law, 1,600,000 trees were planted in State Forests. Nearly 2,000,000 were planted on State game refuges.

In municipal forest projects plantations reached a total of 3,424,000 trees, while plantations by industrial concerns increased from 1,561,000 in 1928 to 2,013,000. Boy Scout plantations totaled 81,000, school forests 182,000, miscellaneous organizations 1,309,000, and plantations by farmers and individual land owners 9,158,000. Two new nurseries have been established and will be increased in facilities until a maximum output of 75,000,000 trees is reached. Thirty-five million three and four-year-old transplants will be available for planting next spring.

Russia Supplies Japan With Lumber

Japan is going to be one of Russia's best customers for lumber if a preliminary agreement between the two governments is carried out. Howard B. Titus, Assistant Trade Commissioner of the Department of Commerce, reports that the contract calls for the furnishing of 240,000,000 board feet of lumber during 1930. This will be an increase of 41,000,000 board feet over 1928, the banner year of lumber business between the two countries.

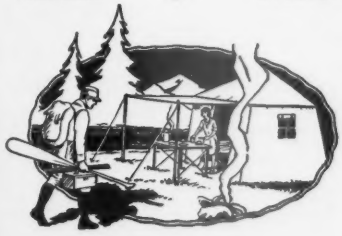
VOICE

AMERICA

AUTHORITY ON CONSERVATION AND RESTORATION

BEAUTIFUL PICTURES

THRILLING STORIES



OUTDOOR AMERICA

YOU will enjoy OUTDOOR AMERICA. Each issue is full of valuable information pertaining to life out-o'-doors. It will keep you and your family fully informed on sports afield and astream and on latest developments in conservation and restoration. And it costs only $3.00 a year!

The
IZAAK WALTON LEAGUE OF AMERICA
549 W. Randolph St., Chicago, Ill.

PRACTICAL GUIDANCE

SPECIAL SERVICES

SAMPLE COPY FREE

Dept. A. F. 4
OUTDOOR AMERICA,
549 W. Randolph St., Chicago, Ill.

☐ Please send me a free sample copy without any obligation whatsoever.

☐ Please enter my subscription for one year and bill me $3.00 for it.

Name.....

Address.....

.....

Air Photography Course at Syracuse University

A course in air mapping has been organized at Syracuse University for students of Applied Science and the New York State College of Forestry. This course will be under the direction of the Airplane Photographic Department. The course is being financed under an endowment totaling approximately $60,000 from the Guggenheim Foundation for the promotion of aeronautics. The new course is headed by Professor S. D. Saranson.

The importance of developing a course of this kind in forestry has been demonstrated by some of the large timber-estimating projects of the West and in the Canadian forests, it is pointed out. It is possible to make photographs from an airplane that will give the experienced forest engineer and reader of aerial photographs an idea as to the approximate amount of timber on a particular area as well as the types of forest, the topography of the country and the best routes over which ground cruising parties may be directed. By the use of airplane maps much of the former tedious work of ground survey has been obviated.

Georgia to Have Commercial Forestry Conference

At a recent meeting of representatives of the Georgia Forestry Association and the United States Chamber of Commerce in Atlanta, a decision was reached to hold a Georgia Commercial Conference, at Savannah, in June. A committee of leading citizens of the state was appointed to promote the conference.

Various phases of the problem of developing the full commercial possibilities of Georgia's forest and potential forest areas are to be considered, including fire protection, reforestation, better turpentining and logging methods and completer utilization. The annual meeting of the Georgia Forestry Association will be held during the conference.

Plans for Inter-American Conference Take Form

Leon M. Estabrook, of the foreign service of the United States Department of Agriculture, will assist Dr. A. F. Woods, director of scientific work, in making arrangements with the Department of State and the Pan American Union for the Inter-American Conference on Agriculture, Forestry, and Animal Industry, to be held at Washington, September 8-20, 1930. This conference, the outgrowth of recommendations of the Sixth International Conference of American States held at Havana in 1928, is to consider plant and animal production, and to develop plans for all phases of agricultural cooperation.

MILES AND MILES OF MOUNTAIN LAKE

FRAGRANT pines pierce the sky . . . calm water as smooth as lacquer . . . no need to dig deep with your blade . . . just flowing, tireless strokes. Your "Old Town" floats like a fleecy cloud . . . the trip is one long glide. "Old Towns" are beautifully balanced—durable, sturdy and strong.

They're modeled after the Indians' craftsmanship . . . reinforced through modern manufacturing methods. Your "Old Town" will go for years without any repairs. Free catalog shows and prices many models. As low as $67. Also shows big, fast, seaworthy, all-wood outboard boats for family use; rowboats; dinghies; and speedy step-planes. Write today. Old Town Canoe Co., 1134 Fourth St., Old Town, Maine.

"Old Town Canoes"

Don't Be a Sissy
Camp with
DAN BEARD
Woodcrafter, Scout and Veteran Sportsman

Learn to be an outdoor leader like Lindbergh, to ride like Paul Revere, to use a bow like Robin Hood, swim like a South Sea Islander, observe like Audubon and live like Robinson Crusoe.

Indorsed by the greatest men in the country.

Write for information.

THE DAN BEARD OUTDOOR SCHOOL
Dept. B. Suffern, New York

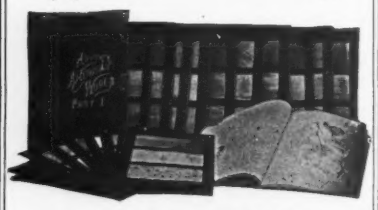
ATTRACT WILD DUCKS, FISH, MUSKRATS, UPLAND GAME BIRDS AND ANIMALS

Plant Natural Foods that will bring and hold large numbers at your favorite hunting or fishing grounds. Wild Rice, Wild Celery, Duck Potato and 30 others, described in free illustrated book. Write, describe grounds, and receive free planting advice and book.
WISCONSIN AQUATIC NURSERIES
Box 331-K, Oshkosh, Wis.

HUNTERS
FOR SPRING BEAR HUNTING, SUMMER VACATIONING
(Branding, Fishing, Pack Trips)
FALL BIG GAME HUNTING,
WRITE
CARL DUNRUD
Double Dee Ranch Pitchfork, Wyoming

U. S. HEADQUARTERS
Imported Arms, Ammunition & Parts
Mauser - Luger - Merkel Bros. - Mannlicher, - Webley - Scott, etc.
Full line American Arms & Ammunition
Springfield's Restocked to Col. Whelen's Revised Specifications
Largest stock in America of fine new Rifles, Trap, Field Guns, Side Arms, Air Rifles & Pistols. • Telescopes mounted. • Expert Repairing. • Send 25c in stamps for 128 page Arms Catalog.
A. F. STOEGER, Inc. NEW YORK, N.Y.
509 Fifth Avenue (at 42nd St)

WOOD SECTIONS



American Woods

A collection of actual wood sections (showing end, quarter and flat grains of each species), with text, telling uses, properties, distribution, etc. The plates in which the thin sections are mounted are removable for examination.

Issued in 14 volumes, 25 species in each. $10 and $15 per vol., according to binding. Send for list of species in each volume.

Lantern and Microscope Mounts of Woods, Tree Studies for Lantern, etc.

Handbook of Trees

The 891 illustrations enable one to identify all of the trees east of the Rocky Mountains and north of the Gulf States at any season.

$8 and $15, according to binding.

Write for further information

ROMEYN B. HOUGH CO.
Lowville, N. Y.

THE
ALHAMBRA
HOT SPRINGS HOTEL
ALHAMBRA, MONTANA

The resort of the Great Northwest on

THE GREAT NORTHERN
THE SUNSHINE TRAIL
THE NATL. PARKS AIR LINE

(Write for Booklet)

"TREE SEEDLINGS for REFORESTATION"

	100	1000
CATALPA SPECIOSA. Western Catalpa.		
12 to 18 inch seedlings	$1.00	$6.00
18 to 24 inch seedlings	1.50	8.00
2 to 3 feet seedlings	2.00	12.50
LOCUST. Black.		
6 to 12 inch seedlings	.50	3.50
12 to 18 inch seedlings	.75	5.00
18 to 24 inch seedlings	1.00	7.50
2 to 3 feet seedlings	1.50	10.00
WALNUT. White (Butternuts).		
12 to 18 inch seedlings	1.50	12.50
18 to 24 inch seedlings	2.00	17.50
2 to 3 feet seedlings	3.00	25.00
LIRIODENDRON TULIPIFERA. Tulip Tree.		
12 to 18 inch seedlings	1.25	10.00
18 to 24 inch seedlings	1.75	12.00
2 to 3 feet seedlings	2.50	20.00
SYCAMORE. American.		
6 to 12 inch seedlings	2.50	20.00
12 to 18 inch seedlings	3.00	25.00
18 to 24 inch seedlings	4.00	30.00
2 to 3 feet seedlings	5.00	40.00

All stock offered in this advertisement is nursery grown. Write for Catalog.

BOYD NURSERY CO.
F. C. BOYD, Manager
McMinnville, Tennessee

Lake States Survey Indicates Small Trees Logged at Loss

A penalty of $1.05 to $4.66 for every thousand board feet of lumber cut from trees less than twelve inches in diameter is paid by Lake States lumbermen who include the smaller trees in their logging operations. This is one of the major conclusions reported as a result of studies of the Lake States Forest Experiment Station at St. Paul, Minnesota, and the Forest Products Laboratory at Madison, Wisconsin.

Lumbermen in the Lake States, with no virgin timber in prospect for cutting after their present holdings are exhausted, must choose between two lines of action, the Forest Service declares. They may sell their equipment and go out of business, or take steps to put their remaining stands on a rotation basis. Perpetuation of both trees and income calls for selective logging—a partial cutting practice involving a judicious selection of the trees removed so as to perpetuate and improve the forest and at the same time maintain or increase the profit.

Logging to a profitable size limit, the study showed, is particularly suited to mixed, uneven-aged forests such as the northern hardwoods.

The Lake States study involved an analysis of cost data on a number of representative logging operations in northern Wisconsin and the upper peninsula of Michigan. A field crew calculated the cost of each step in the logging and milling of each diameter class from nine to twenty-five inches of sugar maple, yellow birch, and eastern hemlock. Estimates of the cost of insurance, depreciation, and marketing were added to costs of logging, hauling, and milling, to determine for the region and conditions represented what margin for stumpage, profit and risk is derived from the cutting of each size of tree or what loss might be incurred.

For a single nine-inch tree the average total cost of dry lumber per thousand board feet was found to be $4.66 in excess of the value of the lumber even without figuring in the cost of permanent improvements, supervision, general expense, taxes, and insurance. With each increase in diameter the ratio of value to cost rises, the twelve-inch tree showing the first balance in profit—a margin of one dollar. Lumber from the sixteen-inch tree was found to be worth $9.21 more per thousand than the cost of production, and from the twenty-four-inch tree $21.59 more.

It was found that the highest profit per thousand feet of combined yield was possible when only eighteen-inch trees and larger were cut. If a good supply of timber is on hand, this cutting limit will leave forty-one per cent of the original volume of the stand on the ground to provide a second cut of large timber within a reasonable time.

Under selective logging the annual growth per acre will range from 102 to 240 board feet, depending on the number, size, and species of trees left and on the site.

Prize Money for Teachers

AMERICAN FORESTS AND FOREST LIFE announces a contest designed to aid teachers to enrich their pupils' knowledge of trees, forests, and related outdoor fields through supplementary reading and the use of visual material in the schools.

The instructive articles and illustrations which appear in every issue are used in many schools, and with the aid of the "Science Education Page," conducted by Ellis C. Persing, School of Education, Western Reserve University, have proved of great value in connection with regular textbook assignments.

The Contest

For the best suggestion embodying a detailed lesson plan and outlining how AMERICAN FORESTS AND FOREST LIFE can best be used in the schools, the following cash prizes will be awarded:

First prize $50
Second prize $25
Third prize $10

For the next five best suggestions, yearly subscriptions to AMERICAN FORESTS AND FOREST LIFE will be awarded.

You do not have to be a subscriber to participate in the contest. If your school is not receiving the Magazine, procure a copy from your local city or town library, or send to us, for a sample copy.

Rules of the Contest

The contest is open to all teachers from grades one to twelve.

Manuscripts should be limited to one thousand words or less, but there is no limit on the number of plans which a teacher may submit.

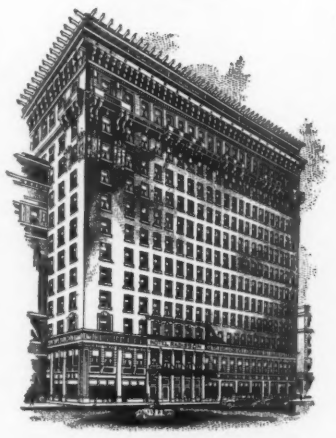
Write on one side of the paper only, and in the upper left-hand corner of the first page give your name, grade you teach, name of department, name and location of your school.

Manuscripts will not be returned unless accompanied by the necessary return postage.

The contest closes on June 1, and manuscripts mailed after that date will not be considered. All manuscripts should be addressed to

School Contest Editor
AMERICAN FORESTS AND FOREST LIFE
1523 L Street N. W.
Washington, D. C.

RADISSON HOTEL
MINNEAPOLIS



HEADQUARTERS
of the
AMERICAN FORESTRY ASSOCIATION CONVENTION
April 29, 30, May 1

Make Your Reservations Early

First-class accommodations at moderate prices

Conservation Calendar in Congress

In introducing this monthly feature as a new service to the members of The American Forestry Association, the Editor invites comment as to its value.

LAWS PASSED

H. R. 5191—Authorizing the State of Nebraska to make additional use of Niobrara Island as a game and fish preserve. Approved February 7. Public Law No. 44.

S. J. Res. 91—Amending sections 3 and 4 of the Act entitled "An Act to authorize and direct the survey, construction, and maintenance of a memorial highway to connect Mount Vernon, in the State of Virginia, with the Arlington Memorial Bridge across the Potomac River at Washington." Approved January 23, 1930. Public Resolution No. 34.

S. 846—Conveying to the State of Michigan for park purposes the Cheboygan Lighthouse Reservation, Michigan. Passed by the Senate on December 18, 1929; passed by the House on March 4, 1930; approved March 8, 1930.

APPROPRIATIONS

H. R. 7491—Department of Agriculture bill, carrying appropriations for 1931 for the Forest Service, Biological Survey and conservation activities in other bureaus. Introduced by Representative Dickinson, of Iowa. Report No. 33 contains hearings before House Committee. Passed the House December 20, 1929. Reported to the Senate February 4, 1930 (Senate Report No. 151). Recommended increases for forestry, $80,500 over amounts passed by House.

H. R. 6564—Department of the Interior appropriation bill carrying appropriations for 1931 for the National Park Service, the Indian Service and the Office of Public Lands. Introduced by Representative Cramton, of Michigan. Report No. 25, hearings before House Committee. Passed the House December 11, 1929. Referred to Senate Committee on Appropriations.

H. R. 9979—Deficiency appropriation bill for the fiscal years 1930 and 1931. Includes $3,300,000 for fighting forest fires on National Forests during past fire season; $180,000 to combat insect infestations on National Forests in Idaho, Montana, and Wyoming; $45,000 for fighting forest fires on the Indian Forests during the past season, and other items for the several conservation bureaus. Introduced by Representative Wood. Report No. 685. Passed the House February 21. Referred to the Senate Committee on Appropriations February 22. Passed Senate and sent to Conference March 12.

FORESTRY

S. 3487—Authorizing an appropriation of $900,000 for the construction of additional laboratories for the use of the Forest Products Laboratory at Madison, Wisconsin. Introduced by Senator La Follette, of Wisconsin, January 6. Referred to Committee on Agriculture. Senate Report No. 222. Reported favorably without hearings, February 25.

H. R. 9900—Bill similar to above. Introduced on February 14 by Representative Haugen. Hearings held on February 25. Reported favorably by Agricultural Committee, March 18.

S. 2354—To extend the provisions of the Agricultural Marketing Act to include naval stores. Introduced by Senator George, of Georgia, December 4, 1929. Referred to Committee on Agriculture. Senate Report No. 230—February 28.

H. R. 3245—Authorizing an appropriation of $4,500,000 for constructing permanent improvements on National Forests to provide more effective fire protection. Introduced by Representative Englebright, of California, May 23, 1929. Hearings before House Committee on Agriculture and Forestry March 10, 12 and 13.

S. 3594—Similar to above bill, introduced by Senator McNary, of Oregon, February 17. Referred to Committee on Agriculture and Forestry.

S. 3130—Authorizing appropriation of $500,000 annually for the control of emergency insect infestations on National Forests. Introduced by Senator Oddie, of Nevada, January 6. Referred to Committee on Agriculture and reported unfavorably by Secretary of Agriculture.

H. R. 8804—Bill similar to above, introduced by Representative Englebright. Referred to Committee on Agriculture.

H. R. 5410—Authorizing appropriation of $150,000 during first year, increasing to $400,000 a year, to enlarge tree planting operations on National Forests east of the Rocky Mountains. Introduced by Representative Knutson, of Minnesota, November 21, 1929. Hearings before House Committee on Agriculture February 4. Hearings published. Reported March 19.

S. 3531—Bill similar to above, introduced by Senator Vandenberg, of Michigan, February 12. Referred to Committee on Agriculture and Forestry.

EGGS EGGS EGGS

For Spring Shipment

Ringnecks, Mongolian, Silver, Golden, Lady Amherst, Reeves, and Versicolor Pheasants. Special prices in quantity orders. Feeding and rearing instructions free with order.

Illustrated Literature, 10 cents

INDIANFIELD PHEASANTRY
Dept. A. F. TELFORD, PA.

BOB WHITE QUAIL (Partridges)

Southern Native, Northern and Mexican varieties. My Free 1930 Folder explains varieties, how to plant them, letters from customers, prices, etc. Delivery December to late April. Largest producer in America.

M. E. BOGLE
Box 837, San Antonio, Texas

4 Capital Stags (Red Deer)
To Be Shot Autumn, 1930

First rate hunting district (open, no park) with every accommodation. Suitable also for older sportsmen. Shooting covers, stalking tracks. If desired the entire hunting could also be let (Red Deer, Fallow Deer, Wild Black, Boars). Write:

Dr. of Law von Dewitz
Goelpin near Burg Stargard, Mecklenburg, Germany

SCOTTISH TERRIERS

Beautiful stock now ready for delivery. *Priced Reasonably.*

LOGANBRAE KENNELS
Rutland Vermont

RECREATION MAPS

Embody entirely new principles, searching out and emphasizing recreational resources. We are prepared to compile and publish small or large editions for national organizations, state or municipal departments, tourist bureaus, automobile associations, chambers of commerce, railroads, and hotels. An interesting folder has been prepared which tells the complete story of RECREATION MAPS and their uses.

Write for your copy.

George S. Lee & Co., Inc.
RUTHERFORD, N. J.

TAXIDERMY SUPPLIES

Glass Eyes, Taxidermists, Furriers, Tanners, Trappers, Fox and Rabbit Fur Farms, Supplies.

F. SCHUMACHER & SONS, Dept. A. F. A. F. L.
285 Halladay St., Jersey City, N. J.

Gentlemen: Please send me free catalog.

Name.....

Address.....

Your Trees
Should be
TRIMMED Scientifically

There is no task to tree trimming when Bartlett Pruning Implements are used—endorsed everywhere by expert horticulturists.

POLE SAW No. 44—(curve saw cuts freely) 6 ft., $4.40. Other lengths up to 16 ft., $5.60.

LOPPING SHEARS No. 777—(will not wound the bark) 26 inch, white ash, highly tempered steel, $3.50.

POLE TREE TRIMMERS No. 1R—(compound lever, easy cutting) 6 ft. pole, $5.50. Other lengths up to 16 ft., $7.20.

Ask for Complete List and Booklet 16

BARTLETT MFG. CO.

Box 19, 3003 E. Grand Blvd. Detroit, Mich.

ALWAYS A DEMAND FOR SKILLED TREE EXPERTS

Big money—opportunities both in America and Abroad. Anyone can learn. Little spare time home study. City park departments, private estates, forestry companies, telephone companies, fruit growers, tree surgery companies need trained tree experts at all times. Profitable, healthy work. Write

Van Valkes Tree Surgery School

Dept. A

Westbury, New York

Health NATURE'S WAY

Tree Surgery Foremen

An established firm of tree surgeons in Westchester county, adjacent to New York City, offers attractive positions to tree surgery foremen.

Applicants should be skilled in the use of sectional cement filling, experienced in all phases of the profession and graduates of some recognized school of forestry or tree surgery.

WAHL AND FERGUSON
RYE, N. Y.

Henry Vaughn - Eames
CONSULTING AND OPERATING TREE SURGEON
Suite 1001-2
509 Fifth Avenue, New York City

Forest Trees of the District of Columbia

A handy pocket-size book of 64 pages, containing illustrations and the distinguishing characteristics of 68 of the more common forest trees of the United States. Also gives both the common and scientific names.

Over 8,000 copies have been sold
30 cents, postpaid

AMERICAN FORESTRY ASSOCIATION
1523 L Street N. W. Washington, D. C.

S. 2366—Increasing proportion of annual receipts on National Forests to be paid to the states for public schools and public roads from twenty-five per cent to fifty per cent. Introduced by Senator McNary. Referred to Committee on Agriculture.

S. 62—Promoting development, protection and utilization of National Forest resources, and to stabilize the livestock industry. Introduced by Senator Smoot, of Utah. Referred to Committee on Agriculture.

S. 1190—Bill similar to above, introduced by Senator Phipps, of Colorado, May 20, 1929. Referred to Committee on Agriculture. Similar to bill introduced by Senator Phipps in previous Congresses.

S. 940—Creating an executive department of the government to be known as the Department of Conservation. Introduced by Senator Hawes, of Missouri. Referred to Committee on Interstate Commerce.

S. 1594—Transferring the Forest Service and other bureaus of conservation to the Department of the Interior. Introduced by Senator King, of Utah. Referred to Committee on Public Lands and Surveys.

S. J. Res. 101—Authorizing the President to call a conference for the purpose of formulating a comprehensive plan for forest conservation and reforestation. Introduced by Senator King, of Utah. Referred to Committee on Agriculture.

S. 2498—Protection of forest lands in the Superior National Forest in northern Minnesota to the end that there may be developed the Superior-Quetico International Park. Known during the 70th Congress as the Shipstead-Newton bill. Introduced by Senator Shipstead, of Minnesota, December 4, 1929. Referred to Committee on Public Lands and Surveys.

H. R. 6981—Bill similar to above, introduced by Representative Nolan, of Minnesota. Hearings before Public Lands Committee of the House February 4-13. Favorably reported March 14.

H. R. 8968—Similar to S. 2498 and H. R. 6981 but covering a more restricted area. Introduced by Representative Pittenger, of Minnesota. Referred to Committee on Public Lands.

H. R. 9412—To construct a memorial to the leadership of Theodore Roosevelt. Authorizes an appropriation of $25,000. Introduced by Representative Leavitt, of Montana, February 1. Referred to Committee on the Library.

H. R. 10877—Authorizing $3,000,000 for the fiscal year 1932 and the same amount for the following fiscal year to purchase forest lands in the eastern states as authorized by the Weeks law (Act of March 1, 1911). Replaces H. R. 5694, unfavorably reported by the Secretary of Agriculture, because it is not in harmony with the President's financial program. This bill will continue the existing authorizations of the Woodruff-McNary law for two more years. Introduced by Representative Clarke, of New York, March 18.

S. 2244—Bill similar to above, introduced by Senator McNary, of Oregon. Referred to Committee on Agriculture.

S. 2246—Amending the Clarke-McNary law authorizing $100,000 for cooperation with state foresters so that forest industries and timberland owners may be given assistance in the management of their forest lands. Introduced by Senator McNary, of Oregon. Referred to Committee on Agriculture.

H. R. 3569—To permit a national land survey to determine areas unprofitable for agriculture, and to extend the provisions of the Weeks Law to permit their purchase by the National Forest Reservation Commission. Introduced by Representative Fulmer, of South Carolina, May 31, 1929. Referred to Committee on Agriculture.

H. R. 6976—Authorizing $100,000 for establishing and operating a reforesting station in South Carolina. Introduced by Representative Fulmer, of South Carolina. Referred to Committee on Agriculture.

S. J. Res. 116—To extend the provisions of the Clarke-McNary Law to Porto Rico. Introduced by Senator McNary, of Oregon. Referred to Committee on Agriculture.

H. J. Res. 192—Bill similar to above introduced by Representative Davila, of Porto Rico. Referred to Committee on Agriculture.

S. 122—To amend the Clarke-McNary Law to permit the distribution of cooperatively produced forest planting stock to all privately owned lands and to allow their use for water conservation. Introduced by Senator Oddie, of Nevada, April 18, 1929. Referred to Committee on Agriculture.

S. 3775—Authorizing appropriations of $12,500,000 for forest roads and trails. Introduced by Senator Oddie, of Nevada, February 28. Referred to the Committee on Post Offices and Post Roads.

H. R. 10379—Bill similar to above. Introduced by Representative Colton, of Utah, February 28. Referred to the Committee on Roads.

S. 3717—Authorizing the sale of lands in the Mt. Hood National Forest to the city of Portland, Oregon, for protecting the sources of its water supply. Introduced by Senator McNary, of Oregon, February 26. Similar bills introduced in two previous sessions of Congress were reported on unfavorably by the Secretary of Agriculture.

S. 3817—Authorizing expenditures for completing water supply or sanitary systems on National Forests; reimbursing owners of private property for damages incurred in the protection, administration or improvements of National Forests; and authorizing emergency expenditures which may be incurred in searching for persons lost in National Forests and for transporting persons seriously ill, injured or those who die within the National Forests. Introduced by Senator McNary, of Oregon, March 5.

S. 2058—Granting one million acres of land in the National Forests within Oregon to the State of Oregon for the erection, equipment, and maintenance of public buildings. Introduced by Senator McNary, of Oregon. Referred to Committee on Agriculture and Forestry. Under date of December 5, 1929, Secretary Hyde recommended against its enactment.

PARKS

H. R. 3867—To establish the Ouachita National Park in Arkansas. Similar to bill which was pocket-vetoed by President Coolidge. Introduced by Representative Wingo, of Arkansas, June 11, 1929. Referred to Committee on Public Lands.

H. R. 3568—Revising the boundaries of the Yellowstone National Park. Introduced by Representative Cramton, of Michigan. House Report No. 181. Passed the House February 3. Referred to Senate Committee on Public Lands and Surveys.

H. R. 8163—To facilitate the administration of National Parks. Introduced by Representative Colton, of Utah, January 7. Referred to Committee on Public Lands.

S. 195—Bill similar to above introduced by Senator Nye, of North Dakota. Referred to Committee on Public Lands and Surveys.

H. R. 8763—Authorizing the Secretary of the Interior to investigate and report to Congress on the advisability of establishing the Apostle Islands National Park in Wisconsin. Introduced by Representative Peavey, of Wisconsin, January 17. Referred to Committee on Public Lands.

S. 2318—To establish the Grand Coulee National Park in the State of Washington. Introduced by Senator Jones, of Washington, December 3, 1929. Referred to Committee on Public Lands and Surveys.

H. R. 239—To establish the Kildeer Mountain National Park in North Dakota. Introduced by Representative Sinclair, of North Dakota, April 15, 1929. Referred to Committee on Public Lands.

H. R. 5672—Abolishing the Papago Saguaro National Monument in Arizona. Introduced by Representative Douglas, of Arizona. Referred to Committee on Public Lands. Reported to the House January 17. Passed House February 17.

S. 2173—Bill similar to above, introduced by Senator Hayden, of Arizona. Reported favorably January 21. Senate Report No. 128.

H. R. 8284—Abolishing the Platt National Park, in Oklahoma. Introduced by Representative Cramton, of Michigan. Referred to Committee on Public Lands.

H. R. 8283—Changing the name of the Platt National Park, in Oklahoma, to the Platt National Monument. Introduced by Representative Cramton, of Michigan. Referred to Committee on Public Lands.

H. R. 235—To establish the Roosevelt National Park in North Dakota. Introduced by Representative Sinclair, of North Dakota, April 15, 1929. Referred to Committee on Public Lands.

S. 326—To establish the Royal Gorge National Park in Colorado. Introduced by Senator Waterman, of Colorado. Referred to Committee on Public Lands.

H. R. 8534—To transfer administration of the Sullys Hill National Park, in North Dakota, to the Department of Agriculture and maintain it as the Sullys Hill National Game Preserve. Introduced by Representative Hall, of North Dakota. Referred to Committee on Public Lands.

H. R. 4020—Authorizing the Secretary of the Interior to investigate and report on the advisability of establishing an Upper Mississippi National Park in Iowa. Introduced by Representative Haugen, of Iowa. Referred to Committee on Public Lands.

H. R. 26—Authorizing the acquisition, establishment and development of the George

STRONG, heavily galvanized fences of all types for every purpose.

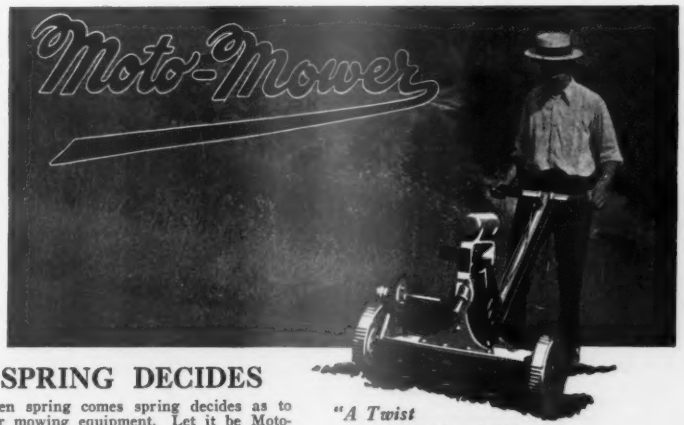
Thirty-eight years of manufacturing and erecting experience. Phone or write to the nearest Anchor Representative for our catalog.

ANCHOR POST FENCE CO.
Eastern Av. & Kane St.,
Baltimore, Md.

Albany	Detroit	New York
Boston	Hartford	Philadelphia
Charlotte	Houston	Pittsburgh
Chicago	Los Angeles	St. Louis
Cincinnati	Mineola, L. I.	San Francisco
Cleveland	Newark	Shreveport

Representatives in other principal cities
Consult Local Phone Directory

ANCHOR Fences



SPRING DECIDES

When spring comes spring decides as to your mowing equipment. Let it be Moto-Mower—the standard by which power lawn mowers are judged. A new throw-out clutch this year—cutting and traction units have separate clutches. A "drop-out" reel permits complete removal of the reel. A sickle bar for weed clipping at small extra cost. Get the new 1930 catalog.

THE MOTO-MOWER CO.
3242 E. Woodbridge St., - - Detroit

"A Twist of the Wrist Guides It"

THE MOTO-MOWER COMPANY
3242 E. Woodbridge St., Detroit, Mich.
Please send the catalog to:
Name .....
Address .....
.....

WHITE PINE
CERTIFIED FREE
from BLISTER RUST

The *only* commercial nursery in New England having such CERTIFIED stock and a permit to ship White Pine out of New England.

Here's a Safe Place to Buy EVERGREEN TREES

***By the Thousands* FOR FOREST PLANTING**

Scotch and Red Pine, White and Norway Spruce can be furnished in practically unlimited quantities. All well rooted — 4-year transplants. Have had their start in a hardy climate—have a record for satisfactory results.

Write for folder and prices.

We do contract forest planting in New Eng. Get our prices.

Western Maine Forest Nursery
Dept. A2, Fryeburg, Maine

Trees for Reforestation

Red Pine
White Spruce

Sold in large quantities at wholesale prices for Commercial Projects, Estates and City Watersheds.

Write at once for prices

Winchendon Forest Nurseries, Inc.
Established 1923
WINCHENDON, MASS.

EVERGREEN TREES
For Ornamental or Forest Planting

Trees of *known* quality; raised from SEED at our Nurseries under personal supervision, based on 20 years' experience. All varieties. Sizes range from seedlings, thru 3, 4 or 5 year transplants, up to 20 feet tall. Prices astonishingly reasonable. Write for Catalog and know about our guarantee.

FRANKLIN FORESTRY Co.
89 STATE ST. BOSTON, MASS.
NURSERIES AT COLRAIN - SUDBURY - PLYMOUTH

It isn't a Home
Until it is Planted

SPECIAL TOOLS FOR PLANTING and PRUNING
Spades, Shovels, Knives, Shears.
Ask for our catalogue.
F. W. SCHUMACHER, P. O. B. 131,
Jamaica Plain, Mass.

Washington Memorial Parkway in the District of Columbia and in the adjoining states of Maryland and Virginia. Introduced by Representative Cramton, of Michigan. Passed the House January 30. Referred to the Senate Committee on the District of Columbia. Hearings held March 3.

S. 3146—To aid in the establishment of State Parks. Introduced by Senator McNary, of Oregon, January 6. Referred to Committee on Public Lands and Surveys.

H. R. 9051—Bill similar to above introduced by Representative Englebright, of California. Referred to Committee on Public Lands.

H. R. 10584—Authorizing appropriations of $20,000 for the fiscal year 1931 and $50,000 for each of the two succeeding years with which to establish nurseries and plant forest trees in Glacier National Park, Montana. Introduced by Representative Leavitt, of Montana, March 7. Referred to the Committee on Public Lands.

INDIAN AFFAIRS

The following bills would create Indian Forests on certain Indian reservations. All bills introduced by Senator Frazier, of North Dakota, December 4, 1929, and referred to the Committee on Indian Affairs:

S. 2489—To provide for the establishment of the Colville Indian Forest.

S. 2490—To provide for the establishment of the Klamath Indian Forest.

S. 2488—To provide for the establishment of the Warm Springs Indian Forest.

S. 3166—To provide for the establishment of the Yakima Indian Forest.

H. R. 6865, H. R. 6863, H. R. 6864, H. R. 8529—Similar bills introduced by Representative Leavitt, of Montana. Referred to the Committee on Indian Affairs.

WILD LIFE

H. R. 9725—Amending and extending the Alaska game law. Introduced by Mr. Sutherland, of Alaska, February 10. Referred to Committee on the Judiciary.

H. R. 243—For the experimental introduction into Alaska of a herd of musk oxen. Introduced by Mr. Sutherland, of Alaska. Referred to Committee on Agriculture.

S. 1551—Bill similar to above, introduced by Senator Norbeck, of South Dakota. Referred to Committee on Agriculture.

S. 2908—Extending protection to the American eagle. Introduced by Senator Norbeck, of South Dakota. Report No. 180 by Committee on Agriculture and Forestry.

H. R. 7994—Bill similar to above introduced by Representative Andresen, of Minnesota, January 6. Hearings held before House Committee on Agriculture and Forestry January 31. Hearings published.

H. R. 7405—Providing a five-year construction and maintenance program for the United States Bureau of Fisheries. Introduced by Representative White, of Maine. Reported favorably, January 7, by the Committee on Merchant Marine and Fisheries. Report No. 110. Committed to the Committee of the Whole House. Union Calendar No. 54.

H. R. 5278—The so-called "Bag Limit" bill, to amend the Migratory Bird Treaty Act. Introduced by Representative Haugen, of Iowa. Hearings before House Committee on Agriculture January 27 and 28.

S. 3483—To carry out a ten-year cooperative program for control of predatory animals. Introduced by Senator Norbeck, of South Dakota, January 6. Referred to Committee on Agriculture and Forestry.

H. R. 9599—Bill similar to above introduced by Representative Leavitt, of Montana. Referred to Committee on Agriculture.

H. R. 10422—Authorizing exchanges of lands in connection with the creation of wild-life reservations. Introduced by Representative Colton, on March 1. Referred to the Committee on Agriculture.

S. Res. 212—Requesting the Secretary of the Interior and the Secretary of Commerce to report on the possible projection of the newsprint industry into Alaska. Introduced by Senator McKellar, of Tennessee.

PUBLIC DOMAIN

H. R. 10625—Regulating oil pollution of all navigable waters so as to protect fish and game. Introduced by Representative Hudson, of Michigan, March 10. Referred to the Committee on Rivers and Harbors.

H. R. 6153—Approving the appointment by the President of a Public Domain Commission and authorizing $50,000 for their expenses. Introduced by Representative Colton, of Utah, December 3, 1929. Passed the House January 24. Reported favorably to the Senate February 5, and again February 10 by Committee on Public Lands and Surveys. Senate Report No. 167.

MISCELLANEOUS

S. Con. Res. 23—To establish an American Conservation Week. Introduced by Senator Wagner, of New York. Referred to Committee on Public Lands and Surveys.

H. R. 9376—For a comprehensive system of flood control throughout the Mississippi Valley and the creation of a Federal Board of Public Works. For the work of this board the appropriation of $750,000,000 is authorized. Introduced by Representative Sears, of Nebraska, January 31. Referred to Committee on Flood Control.

H. R. 9722—Providing for the measurement of the discharge of the lower Mississippi River. Introduced by Representative Temple, of Pennsylvania, February 10. Referred to the Committee on Flood Control.

Ask the Forester?

Each Month Forestry Questions Submitted to the Association Will Be Answered in This Column. If an Immediate Reply is Desired a Self-Addressed, Stamped Envelope Should Accompany Letter.

QUESTION: How much has Congress appropriated since 1905 for fighting fires in the National Forests?—*G. P., Colorado.*

ANSWER: The Forest Service reports that from 1906 to 1930, inclusive, $21,087,479 has been appropriated for fire suppression in National Forests. This represents an average annual expenditure of $843,499. The smallest appropriation was for $10,584 in 1907, and the largest is $3,400,000 for the present year. The statement for the current year includes $3,300,000 in the supplemental appropriation bill now before the Senate.

QUESTION: How many acres of forest land and poor farm land in the United States need to be reforested?—*C. L. N., Michigan.*

ANSWER: Between 80,000,000 and 120,000,000 acres of devastated forest land and poor farm land should be reforested. This includes 2,050,000 acres on National Forests. This year's federal appropriation carried $210,000 for planting lands in National Forests and $83,000 for cooperating with the several states in growing and distributing forest planting stock to owners of farm lands.

QUESTION: Is it true that wood will give longer service in contact with the ground if treated when dry rather than when green?—*O. M. B., Michigan.*

ANSWER: All wood that is treated with creosote or other preservatives should first be well seasoned. This is necessary to insure the wood being fully penetrated by the preservative. The water in green wood must first be driven out before the preservative can enter. Furthermore, checks are likely to occur afterward which will expose untreated wood, and offer entrances for decay.

QUESTION: What are the uses of aspen and how many years are required to produce a merchantable stand?—*G. O. H., New Jersey.*

ANSWER: The chief uses for aspen at present are for paper pulp and excelsior. The most rapid growth occurs during the first twenty or thirty years. Well-stocked stands of aspen at fifty years of age should yield from twenty-five to as high as seventy cords of peeled wood an acre, depending on the quality of the soil. Aspen will produce good yields of pulpwood in fifty or sixty years. The average diameter, breast height, of trees at fifty years ranges from six to twelve inches. The Lake States Experiment Station at University Farm, St. Paul, Minnesota, has published a bulletin entitled "Forest Possibilities of Aspen Land in the Lake States" which contains valuable information on growth and management of aspen.

QUESTION: To what extent is the United States dependent upon Canada for newsprint, and how does our consumption compare with world production?—*M. J. C., Massachusetts.*

ANSWER: During 1929 the United States consumed nearly 3,800,000 tons of newsprint, of which our mills produced over 1,390,000 tons. About 2,200,000 tons, or over 58 per cent came from Canada. The world consumption of newsprint is close to 7,000,000 tons, of which the United States uses more than half.

Rhododendrons
Kalmia Latifolia
Azaleas

These plants are carefully dug with good roots and good ball and are of the best quality.

Send list of wants for prices

For other trees and plants ask for our general catalogue.

The Morris Nursery Co.
47 WEST 34th STREET
NEW YORK CITY, N. Y.

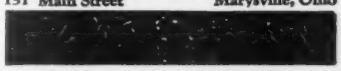
Scott's Creeping Bent for Perfect Lawns

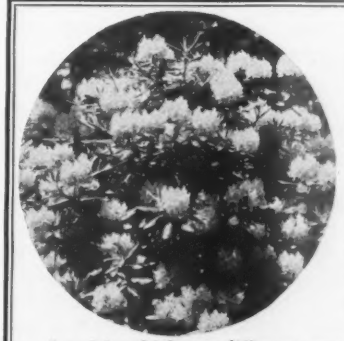
Sod in six weeks! A rich, velvety stretch of lawn that chokes out weeds before they can grow! A deep, thick, uniform turf that's everlasting and makes your home a beauty spot! That's what you'll get if you plant Scott's Creeping Bent.

The New Super-Lawn

Creeping Bent—long recognized as the ideal grass for golf putting greens—is now producing Super Lawns. Instead of sowing seed, you plant stolons or the chopped grass—and in a few weeks you have a luxuriant lawn like the deep green pile of a Turkish carpet. Read all about this unusual grass in our illustrated booklet "Bent Lawns." Mailed on request.

O. M. SCOTT & SONS CO.
151 Main Street Marysville, Ohio





Bring the glory of the hills to your home

NOTHING is more beautiful than the glorious spring blooms of Rhododendrons and Azaleas—modest white, soft orchid pink to orange yellows. Our nursery-grown native Rhododendrons can come to you at very reasonable prices. Catalog on request.

Special offer for $25 includes 12 plants, 1 to 3 feet high, ten different, enough to cover 25 to 40 sq. feet. The blooms are from white to orange, April to July—a wondrous series of blossoms.

La Bars' broad-leafed evergreens call for no maintenance expense. Cold will not kill them. They blend with all forms of architecture. Our nursery-grown stock conserves native forests.

Price for this superior collection only $25, packed, f. o. b. Stroudsburg. Please send check with order.

Each plant marked and guaranteed true to name. We have the largest Rhododendron nursery in America.

Visitors welcome to nursery. Write for full list of shrubs in this offer.

La BARS' RHODODENDRON NURSERY
Box A STROUDSBURG, PA.

Nut Trees

"Dual-Purpose Trees"

Send for our free illustrated catalogue of Black Walnuts, English Walnuts, Pecans, Heartnuts, Hickories and Filberts or Hazelnuts. Now is the Time to Plant.

(40 years growing nut trees)

J. F. JONES NURSERIES
P. O. BOX 356 LANCASTER, PA.

HILL'S EVERGREENS

Send for the most complete Evergreen catalog ever published. Over 100 illustrations. 50 in full natural colors. Scores of artistic planting suggestions. Enclose 25c for catalog, which is refunded on first order.

D. Hill Nursery Co., Evergreen Specialists
Largest growers in America. Box 501, Dundee, Ill.

10 DELPHINIUMS $1.25 Gold Medal Hybrids 20 Plants, $2.40

10 Chinese Delphiniums Dwarf Assrt. $1. 3 Elegan Lilies erect bright red flowers $1. 5 Tiger Lilies red and spotted $1. 6 Hemerocallis lilies Orange shading red, $1.25. 10 Columbine Assrt. $1.25. 25 Grand mixed Gladiolus $1.25, smaller but blooming size $1. All orders prepaid—spring shipment. Catalog free. These are special first class stock and bargains for limited time.

Swedberg Bros. Nurseries, Battle Lake, Minn.

Bigger and Better Flowers and Fruits

1930 Catalogue now ready, offering choicest variety of Potgrown Strawberry Plants Also a wonderful selection of Rose Bushes, Hardy Flowering Plants, Hedge Plants. Grape Vines, Fruit Trees, Hardy Garden Fruits. Every plant can be depended on to produce bigger and better specimens. For your free copy, write to

LOVETT'S NURSERY
Box 63 Little Silver, N. J.

PRINCETON PRODUCTS

Hardy Ornamentals

Catalogue gladly sent on request

PRINCETON NURSERIES

WM. FLEMER'S SONS, INC.
PRINCETON, N. J.

Flowering Evergreen Shrubs

Rhododendron Max, Kalmia, Hemlock & Holly. Seedlings, 6-18, 100-$6, 1000-$50; 2-4 ft., 25-$5, 100-$18; Carload of clumps for $150. Flowering Dogwood and Maple, 2-4 ft., 25-$5, 100-$18; Local orders burlaped, roots packed in damp sheet moss.

J. F. NORRIS, P. O. Doeville, Tenn.

KNOW YOUR TREES
by
Burnell Leaves and Tree Trunks
(Actual Photographs)
Write for prices and samples
FLORENCE C. BURNELL, 233 10th Street
Milwaukee, Wisconsin

Book News and Reviews

TO FAR WESTERN ALASKA FOR BIG GAME. By T. R. Hubback. Published in the United States by Charles Scribner's Sons and in England by Rowland Ward, Limited; 232 pages and illustrated. Price, $3.50.

To those who question big-game hunting on the North American continent this book should prove a revelation; to the camera hunter it is an invitation; the explorer may well dwell in its pages. For when the author went into Alaska with guns and cameras he immediately pushed beyond the Territory's scant civilization to where mountains were unnamed and the great forests unknown. He found wild sheep and great moose that had never before faced gun or camera; he found brown bear and woodland caribou. But, if the book tells the real story, he found that which every big-game hunter treasures most—stirring adventure.—*E. K.*

Pocket Guide to Alaska Trees, by Raymond F. Taylor, United States Forest Service—Miscellaneous Publication No. 55—United States Department of Agriculture—A nontechnical, pocket-sized booklet describing Alaska tree species, giving both their scientific and common names. Contains explanatory drawings identifying the various species. The characteristics and location of Alaska's forested and nonforested areas are described.

EUCALYPTUS IN NEW ZEALAND. By the Rev. J. H. Simmonds. Published by Whitcombe and Tombs, Auckland, New Zealand. 1927. Illustrated with seventy-six botanic plates and twenty-eight scenic plates. Price $12.50.

This splendid quarto volume, written "mainly for tree planters," is without doubt the most comprehensive single treatise on the genus Eucalyptus ever printed. The practical data it presents insures its value, not only to the tree planter, but to the nurseryman, forester, botanist and timber worker as well.

As an authority on the Eucalypts the author commands both scientific and practical information. He has studied the different species in their native settings and has had wide experience in establishing plantations. The book is divided conveniently into seven sections. Sections one and two explain how the genus was discovered and discuss the climatic range within which the four hundred species are found growing. Section three, comprising the major portion of the volume, gives detailed descriptions of the seventy more important species. Mr. Simmond's classification of these trees in six major groups, on the basis of their resistance to thermometrically graded temperatures, is unique and practical, for the Eucalypts vary widely in their climatic demands and their successful planting often depends upon selection of the proper species.

Section five takes up the question of propagation, outlining the different methods, from sowing the seeds *in situ* to the less simple practice of growing and planting seedlings. Information is given regarding the selection of planting ground, nurse plants, spacing, pruning, thinning, natural regeneration, and the prevention of fire—all highly practical. Successive sections deal with related matters such as the harvesting of the timber crop, the preservative treatment of wood, problems of nomenclature and insect enemies, the volume concluding with an alphabetical list of all known species and brief descriptions of them.

Eucalypts in New Zealand is printed in large clear type and is written in a direct and simple style so that even the novice can read it easily and profitably. A review of the book would not be complete without reference being made to the fine botanic plates illustrating the detailed descriptions of the most important species.—*A. C.*

Selective Logging in the Northern Hardwoods of the Lake States, by Raphael Zon and R. D. Garver, Technical Bulletin No. 164, United States Department of Agriculture—Selective logging as contrasted with clear cutting of hardwoods offers a constructive plan for maintaining the forest cover and providing a sustained yield. This bulletin describes the purposes of selective logging in the hardwood-hemlock forest which occupies more than seven million acres in the Lake States. In addition to sugar maple, yellow birch and eastern hemlock, this type of forest includes scattering trees of beech, elm and northern white pine.

This is one of a series of bulletins being prepared by the Forest Service to help toward the application of forest principles upon privately owned timber lands in various regions of the United States.

NURSERIES

New England Plants

Native Trees and Shrubs, Wild Flowers and Ferns, as well as a nice line of Evergreens, Fruit Trees, Berry Plants and Vines, are offered in our 1930 catalog. May we send you a copy?

GEO. D. AIKEN
Box H
Putney, Vermont

Reliability

The Nurseries whose advertisements appear in AMERICAN FORESTS AND FOREST LIFE are chosen from the leading nurseries in their respective localities. They offer you reliable trees, plants, bulbs and seeds and you can purchase from them with the full assurance that they will be satisfactory.

They cannot, in the small space allotted to them, list all of their products, and Members are urged to write to them for complete catalogs.

Ornamental Trees

Catalpa Bungei 1 and 2 year—American Elm 2 - 3 in. Caliber—Norway Maple 8 - 10 feet—Silver Maple 2 - 3 in. Caliber—Poplar Trees—Willow Trees—Evergreens of all Varieties and Sizes—Roses—Privet.

Flowering Shrubs and Fruit Trees

THE ROCKFALL NURSERY COMPANY
ROCKFALL, CONNECTICUT

EVERGREENS

Trees, Shrubs and Perennials for Landscape or Forestry Planting. Catalog sent on request.

THE ELM CITY NURSERY CO.
Box 158 New Haven, Conn.

DAHLIAS

Save 25 to 50 per cent

Best New and Standard Prize Winning Dahlias
Growers and Distributors

Lakewood Dahlia Gardens,
Dept. F—Lakewood, Ohio

EVERGREENS

FOR ALL PURPOSES

Price List Sent on Request

The North-Eastern Forestry Co.
CHESHIRE CONN.

Plant material for Landscape, Horticultural and Forestry Projects. Choice line of Strong Perennial Plants, Trees, Shrubs, Vines and Evergreens, Lining Out Stock, Native Plant Material

Catalog Upon Request

Long Distance, Naperville No. 1

APERVILLE NURSERIES
Established 1865 Naperville, Illinois

FRANKLIN FORESTRY CO.

Nurseries at
Colrain and Sudbury, Mass.

FOREST NURSERY STOCK
CONTRACT FOREST PLANTING

89 STATE STREET
BOSTON MASS.

Orchids

We Specialize in ORCHIDS. Our stock is the largest and most varied in this country. We sell orchids to Florists, Private Collectors, and Botanical Gardens. Will appreciate *your* orders whenever you need orchids.

Send for Special List No. 81
LAGER & HURRELL
Orchid Growers Summit, N. J.

GROW TREES FROM SEEDS

Send for catalogue of tree, shrub, perennial, palm, fruit and evergreen seeds.

CONYERS B. FLEU, JR.
Germantown Philadelphia, Pa.

SEEDS

FOR FORESTRY PLANTING

My catalogue contains a complete assortment of varieties

Send for a copy

THOMAS J. LANE, DRESHER, PA.

FOR SALE

Norway, Sugar, Silver and Sycamore Maples; European Plane; Lombardy Poplars, 8-16 ft.; Pyramidalis arborvitae, 3-4 ft.; Rhododendrons and English Box.

Special Prices to Estates and Gardeners

E. W. JONES NURSERY COMPANY
WOODLAWN, VIRGINIA

EVERGREEN NURSERY STOCK FOR ALL PURPOSES

PINE, SPRUCE, FIR, CEDAR

Our stock is thrifty and sturdy

CENTRAL MAINE FOREST NURSERY
SKOWHEGAN, MAINE

VERKADE'S NURSERIES

Growers of a Complete Line of Evergreens from Seed, Cuttings and Grafted, including Koster Blue Spruce.

New London, Connecticut

GROW YOUR OWN ORNAMENTALS

Or do your forest planting with our sturdy young stock.

Send for our descriptive price list today.

PIEDMONT FORESTRY CO.
Bound Brook New Jersey

Trees for Forest Planting

PINE ⁘ SPRUCE

Firs, Arborvitaes and Other Conifers. We raise all our trees in our own nurseries.

KEENE FORESTRY ASSOCIATES
KEENE, NEW HAMPSHIRE

GLADIOLUS BULBS

100 CHOICE MIXED BULBS $1.00
Postpaid Anywhere in U. S.

Collection made up of full blooming size bulbs of standard varieties in assorted colors. One bulb of Blue Bird extra if you mention this advertisement. Price list of named varieties free.

W. F. SHEARER, ANGOLA, INDIANA

Boxwood, Rhododendrons, Kalmia Latifolia, and Azaleas

in quantities. Also complete nursery stock.
Write for catalogue

BLUE RIDGE PARK NURSERIES, INC.
Gainesville, Georgia

BRISTOL'S TREES

Northern-grown, Hardy Evergreens

Forest and Ornamental Stock, especially Red Pine

H. R. BRISTOL, Plattsburg, N. Y.

Go Fishing?
Play Golf?
Ever Hunt?
Ever Wear
Ballard's *All Wool?*

Jack Miner Does

He knows that Wool is a non-conductor of heat; therefore, keeps body cool in summer and warm in winter.

We Uniform New York State Rangers

J. O. Ballard & Co.
Malone, N. Y.

JAMES W. SEWALL
Consulting Forestry

JAMES W. SEWALL
OLD TOWN
MAINE

PHILLIPS & BENNER
RUTTAN BLOCK
PORT ARTHUR, ONT.

University of Michigan

School of Forestry and Conservation

Prospective foresters and other conservation workers are offered broad, thorough courses with special advantages in location, equipment, staff, forests and opportunities for self-help.

The curriculum is flexible. Four years of study lead to the Bachelor's degree. The fifth year, which is required for the Master's degree, is wholly elective.

Graduate work for the Doctor's degree permits specialization in a number of fields.

Expenses are reasonable and many forestry students are working their way through.

Write for further information.

SAMUEL T. DANA, Dean
Ann Arbor :-: Michigan

New Jersey Values Forests

New Jersey balanced her forest budget, June 30, 1929, and estimated that her forests have a cash value of at least $350,000 for land, timber and buildings alone. This amount is nearly double the purchase cost. There is a total of 26,714 acres of State Forests, scattered from Sussex to Cape May, which had been acquired since 1905 at an aggregate cost of $196,623.85.

The estimate of the present value of these tracts, which have benefited by years of protection, development and growth, does not include their value for public recreation such as camping, hunting and fishing, for watershed and stream protection, forestry demonstrations, studies and experiments. It makes no attempt to place a cash value upon the miles of fire lines, improved roads and trails, and gives no extra value to the hundreds of acres of forest plantations, improvement cuttings and other valuable forestry work that has been advanced. Nor does it consider privately owned developments on areas leased from the State. These benefits, difficult to value in terms of cash, no doubt exceed greatly the timber valuation.

Williams Heads Predatory Control in Michigan

Harry P. Williams, of the United States Bureau of Biological Survey, has assumed charge of the Michigan Department of Conservation predatory animal control system, it has been announced. Mr. Williams has been engaged in similar work in Wyoming.

The Conservation Commission at a recent meeting voted to engage a representative of the Biological Survey. The state trapper system now in use in Michigan was organized originally by a representative of the Biological Survey.

Banded Herring Gull Found With Beak Fastened Shut

A half-starved herring gull, carrying on its leg a Bureau of Biological Survey band, was found on the beach at Mayport, Florida, its bill tightly closed and fastened with a piece of cord, according to recent press dispatches. Records of the Biological Survey show that the bird was one of a number of gulls banded at Gooseberry Island, Maine, six months ago. Officials of the bureau point out that it is obvious the bird bander had no part in tying up the gull's beak, and admit that if he had, the indignation aroused in Florida by such an incident would be fully justified. Had the beak been tied at the time of banding, the bird would have been dead long ago. In fact, part of the string was attached to the gull's leg, indicating that the bird accidentally entangled itself in a piece of fish-line or fish-net.

Choosing a School

The schools whose announcements appear in AMERICAN FORESTS AND FOREST LIFE are the leading forestry schools in their respective localities. They offer a well-balanced curriculum and the inspiration of leaders in the profession of forestry.

Members may select from them with the full assurance that they are choosing from the best.

Harvard Forest
Petersham, Massachusetts

A forest experiment station of two thousand acres, 20 years under management on a sustained yield. Large variety of silvicultural treatment in progress. Logging, milling, and marketing annually carried on. Extensive plantations established from the Forest nursery.

Competent graduate students accepted as candidates for degree of M. F. or D. S.

RICHARD T. FISHER
Director

Forestry Training in the Heart of the Rockies

Colorado School of Forestry
A Department of Colorado College

Undergraduate and graduate courses in Technical Forestry. Forestry teaching in spring and fall at Manitou Forest (a 7,000-acre Forest belonging to the School) and the winter term at Colorado Springs.

Gordon Parker, Director
Colorado Springs, Colorado

University of Maine
Orono, Maine

The Forestry Department offers a four-years' undergraduate curriculum, leading to the degree of Bachelor of Science in Forestry.

Opportunities for full technical training and for specializing in forestry problems of the northeastern States and Canada.

Eight-weeks' camp course required of all Seniors in Forestry, in practical logging operations, in northern Maine, under faculty supervision.

For catalog and further information address

JOHN M. BRISCOE
PROFESSOR OF FORESTRY

Taxation Economist Wanted

The United States Civil Service Commission has announced a competitive examination for a taxation economist to fill a vacancy in the United States Forest Service. The entrance salary is put at from $3,800 to $4,400 a year.

The duties are to assume responsible charge of and carry out individually or with trained assistants, under general scientific supervision, difficult research projects in forest taxation involving the exercise of independent judgment, responsibility for the development of working plans and research methods, the analysis and presenting of results in the form of reports for scientific and administrative approval. Applications for the examination must be filed with the Civil Service Commission, Washington, D. C., not later than April 23.

Parent-Teacher Forest

The Parent-Teachers Association under the leadership of Mrs. James H. Dorsey, of Baltimore, Maryland, has started a national movement for the planting of oak trees on school grounds. Without selecting any special variety of oak, they refer to it as "America's Family Tree" and propose the development of a Parent-Teachers Association Forest whose individual units will be scattered, but which will aggregate a large number of trees.

Georgia Fire Protection Pays

Protection from forest fires in Georgia paid big returns last year, says B. M. Lufburrow, State Forester. He estimates that fire damage amounting to $2,500 was prevented by every single dollar invested in protective measures. In sections which were protected less than a half per cent of the area was burned. This amounted to 10,588 acres and the loss in dollars is estimated at $13,025. The protected area comprises about one and a quarter million acres.

Twenty-two per cent of the unprotected area burned, involving a loss estimated at $5,000,000, he stated.

A Tree Planters' School

The Department of Forestry of the New York State College of Agriculture, Cornell University, Ithaca, in cooperation with the New York State Department of Conservation, held a tree planters' school in Ithaca on March 27 and 28. This was attended by forestry committeemen of the county boards of supervisors from most of the nineteen counties which are establishing forest units under the Hewitt bill.

New York Bill to Aid Reforestation

The New York State Reforestation Commission has had introduced in the State Legislature an amendment to the State Constitution which will bring about a new era in forest conservation, it is stated.

Recently a project was started in New York to reforest one million acres over a ten-year period. In view of the fact that a good share of a vast area of five million acres of idle land in need of planting are in the Adirondack counties, the Commission has advanced a bill which will permit the state to purchase these lands as it may deem advisable and provide for the growing of timber for commercial purposes. This will not mean interference with the scenic features, recreational opportunities, fishing and hunting and other forest and park pleasures, it is stated, but will mean that forest management can be practiced on some of the districts outside the so-called park or blue lines in the Forest Preserve counties.

USE
HAUCK
FIRE-GUNS
for
Brush and Safety
Strip Burning
Backfiring

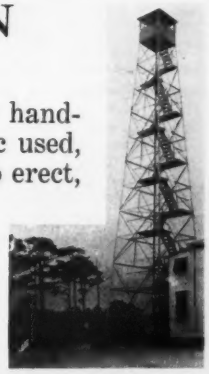
Send for Free Bulletin

Hauck Manufacturing Co.
143 Tenth Street :: Brooklyn, N. Y.

P. T. COOLIDGE
CONSULTING FORESTER
TIMBER ESTIMATES AND LOGGING PLANS
913 Nat'l Bank of Com. Bldg., Norfolk, Va. 31 Central St., Bangor, Maine 1261 Bay St., Toronto, Ont.
P. T. COOLIDGE W. C. WHEELER

FIRE PREVENTION
—TOWERS—

Bessemer Towers, heavily galvanized by hand-dipped method, last 50 years. Purest zinc used, best steel, first-class workmanship, easy to erect, very rigid, withstand 100-mile wind.



Bessemer
Galvanizing Works
Birmingham, Ala.

A Quick and Economical Way to
Extinguish Forest, Grass or Brush Fires!

AN INDIAN protects you against the ravages of fire, no matter where you are. 5-Gal. tank which straps on back, leaving arms free, may be quickly refilled with water. Brass pump built for long, hard service has no leather parts to wear out. An INDIAN never fails to operate in an emergency. That's why it's the choice of U. S. and State Forestry officials. Write for descriptive literature. With an INDIAN you're always PREPARED.

D. B. SMITH & CO.
413 Main St. Utica, N. Y.
Pacific Coast Agts.: Fire Protection Eng. Co., 389 Pine St., San Francisco.

The Smith INDIAN Being Used to Extinguish a Snag Fire
Photo by courtesy of Mr. Secrest, Chief Forester of Ohio

The Smith
INDIAN
Fire Pump

The New York State College of Forestry

Syracuse University
Syracuse, N. Y.

A FOUR-YEAR undergraduate course is offered in General Forestry with the degree of Bachelor of Science and special courses leading to the degree of Master of Forestry, Master of City Forestry, Master of Science, and Doctor of Philosophy; a four-year course in pulp and paper manufacture and a short course each spring in dry-kiln engineering and lumber grading are given. The State Forest Experiment Station of ninety acres at Syracuse, the Charles Lathrop Pack Experiment Forest of 1,000 acres at Cranberry Lake, the Charles Lathrop Pack Demonstration Forest of 2,250 acres in the Lake George-Warrensburg district, three other experiment stations, the Roosevelt Wild Life Forest Experiment Station, a modern pulp mill, a well-equipped sawmill, a complete dry-kiln plant, the biological laboratories, and an excellent reference library afford unusual opportunities for research and instruction. Students may elect work in nine different fields.

NELSON C. BROWN
Acting Dean

Oregon School of Forestry

Located in the center of the last great stand of virgin timber in the United States.

Offers four and five year courses in professional forestry, logging engineering, and lumber manufacture.

Field work in the magnificent Oregon forests, easily accessible from the school. The largest logging operations and lumber manufacturing plants near at hand.

Summer work readily obtainable in the Forest Service, in logging camps, and in the mills.

For catalog and further information, address

G. W. PEAVY, Dean
Oregon State
Agricultural College
Corvallis - - - Oregon

(Authorized by State Board of Higher Education)

Wood Specimens for Schools

For the benefit of schools which have been anxious to use wood specimens for studies in natural history, raw material sources, and like courses, samples of various kinds of wood have been made available by the National Lumber Manufacturers Association. Arranged in sets of forty blocks, each representing a different species of commercial wood, they are designed for the use of schools, high schools and colleges.

These new sets will provide classes in natural history, raw material sources, woodworking, and architecture with first-hand knowledge of native woods.

Pennsylvania Farmers Kill Deer

The Pennsylvania State Game Commission recently announced that 1,193 deer were killed by farmers as a protection to property during 1929. This was the largest number killed by farmers since this privilege was granted them. In 1928 they killed 521 deer, and in 1927 nearly 900 were killed. Deer were killed as a protection to property in thirty-eight counties.

University to Plant 100,000 Trees

One hundred thousand trees will be planted by St. Lawrence University, at Canton, New York, Floyd M. Callward, head of the Forestry Department, has announced. About ninety acres will be included in the project, which includes a demonstration forest for use in extension work throughout northern New York. White, red, and Scotch pine, white and Norway spruce, white cedar and European larch are species selected for the planting. The Department plans to acquire other tracts of idle land from time to time on which will be demonstrated the practicability of reforestation work.

Federal Foresters Transferred

The transfer of four federal foresters of the North Pacific District has been announced by the United States Forest Service. Carl B. Neal, forest supervisor of the Umpqua National Forest, Oregon, has been transferred to the Deschutes National Forest, Oregon; R. L. Fromme, forest supervisor of the Deschutes Forest, has been detailed temporarily on special work in the district office at Portland. Neal's vacancy on the Umpqua has been filled by Vernon V. Harpham, forest supervisor of the Ochoco National Forest. Harpham's vacancy has been filled by the transfer of William O. Harriman, now assistant supervisor of the Deschutes Forest.

All of these forest officers have had many years of experience in forestry work in the Pacific Northwest and are well qualified for their new assignments.

Yale School of Forestry

Established in 1900

A graduate department of Yale University, offering a two years' technical course in forestry leading to the degree of Master of Forestry.

Special opportunities are provided for advanced work and research in the laboratories and the school forests.

For further information and catalog address

The Dean *of the* School *of* Forestry

New Haven, Conn., U. S. A.

School of Forestry

University of Idaho
MOSCOW, IDAHO

Offers thorough training in Practical Forestry, preparing for Federal, State, and private work.

Four and Five Year Courses, leading to the degrees of Bachelor of Science in Forestry and Master of Science in Forestry respectively.

Opportunity is given to specialize in General Forestry, Logging, Engineering, and Range Management.

Large logging and milling operations, important wood-working industries, also extensive Federal, State, and private forests, near at hand. Excellent opportunity for summer employment.

For further particulars address

FRANCIS G. MILLER, *Dean*

Mississippi's School Forest

The University of Mississippi should receive $4,466,000 in revenues during the next fifty years from its 23,000 acres of forest property in south Mississippi, according to Fred B. Merrill, State Forester. This information is disclosed in a report on forest-fire protection. Eradication of razorback hogs and simple forest management, costing about $2,000 per year, are the main requirements in securing these returns, which average about $90,000 per year for the period, it was stated. Realizing the value of the property, the board of trustees of the university in 1927 listed the land with the Mississippi Forest Service for fire protection.

Title to the property, located in Stone, George and Jackson counties, was received from the federal government years ago and the timber sold and cut between 1904 and 1918. A diameter limit of eight inches at sixteen feet above the ground was observed and no skidders were used in logging, so that an adequate number of seed trees remains. However, following logging, little protection has been given to the property, and razorback hogs and fires have prevented natural reforestation. The report indicates that 1,500,000 long-leaf pines—enough to adequately reforest one-tenth of the total area—were destroyed by hogs during 1929. Forest fires have been confined to a relatively small area since 1927, when the board of trustees listed the land for protection with the Mississippi Forest Service.

A recent survey discloses a stand of over 15,000,000 board feet of timber now on the property. Of long-leaf pine, the principal species, there are 10,000,000 board feet, while splash pine, next in importance, is present to the amount of about 4,000,000. Measurements show that the increase in volume during the past ten years has been nearly 8,000,000 board feet, representing an increment of 105 per cent for the decade.

To secure the maximum revenues from the property, the Mississippi Forest Service has recommended a continuation of fire protection, eradication of the razorback hog, and control of trespass through the local representative. In addition, it recommends that no timber sales be made at this time because of the scattered distribution of the timber and the necessity of permitting the trees to remain if natural reforestation is to be obtained.

Irish Free State Turns to Reforestation

The Irish Free State is the latest country to turn its attention to reforestation. Those familiar with her history know that Ireland was once clothed with mighty forests, but that these gradually perished until today no more than one per cent of her total area is in woodland, as compared with nine per cent in Denmark and eight per cent in Holland, countries similar in economic and climatic conditions.

A drastic forestry act, carrying two important features, promises improvement of the situation. It takes powers for the compulsory acquisition of land for planting, and requires that the Minister of Agriculture be notified of any felling that is to take place, giving him power to forbid it if he considers it to be contrary to the general interest, or even if no provision is made for a replanting. A program of afforestation is to be brought forward, dealing in main with the mountainous districts where the greatest benefits will show.

Protecting Auto Woodwork

Automobile body woodwork will be protected from the attack of decay, moisture, and termites as the result of experiments made by Dr. Henry Schmitz, of the University of Minnesota. Three pieces each of thirteen kinds of wood were furnished Dr. Schmitz. One piece of each was given a light, medium, and a heavy treatment, with an open tank dipping method, and will be put into service tests. Accurate figures are kept of the amount of treat by weight absorbed by various typical wood parts in the light, medium, and heavy treatments. From these it will be possible to estimate conclusively the cost of treating a complete set of body woodwork with various degrees of absorption.

UNIFORMS

The kind that give good wear day in and day out, that are always comfortable because they are tailored to fit, that's the kind made by Fechheimer. Terms to U. S. Forest Officers.

Write for samples and prices

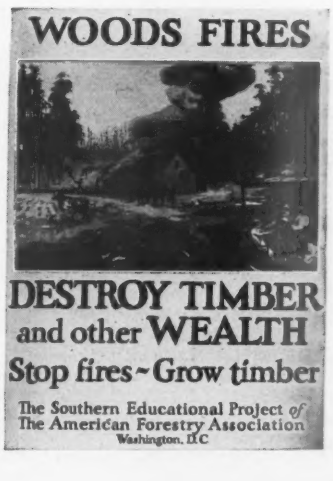
OFFICIAL FECHHEIMER UNIFORMS

The FECHHEIMER BROS. CO.
"America's Foremost Uniform Makers"
Cincinnati, Ohio

EDWARD C. M. RICHARDS
Consulting and Operating Forester
156 Fifth Ave. New York City

Specialist in Forest Estate Management and careful selective cutting operations

NAPECO FIBRE SIGNS



Can be Used Effectively for Prevention of

FOREST FIRES
TRESPASSING
HUNTING
NUISANCES

Write for samples and prices

National Printing and Engraving Co.
7 S. Dearborn St.
CHICAGO, ILLINOIS

National Forest Timber For Sale

Sealed bids will be received by the District Forester, Post Office Building, Denver, Colo., up to 2 P. M., July 2, 1930, and opened immediately thereafter, for timber, estimated to cut approximately 2,000,000 cords of pulpwood, on two areas on opposite sides of the Continental Divide in southern Colorado. One area includes about 150,000 acres within Tps. 38 and 39 N., R. 1 E., Tps. 37, 38, 39, 40 and 41 N., Rs. 2 and 3 E., and Tps. 37, 38, 39 and 40 N., R. 4 E., all of N. M. P. M., Rio Grande National Forest, known as the South Fork Unit, estimated to cut about 1,240,000 cords of pulpwood, approximately 80 per cent Engelmann and blue spruces and 20 per cent white and alpine firs, together with unestimated but relatively small amounts of pines and Douglas fir to be cut at the option of the purchaser. The other area includes about 121,000 acres in Tps. 36, 37 and 38 N., R. 5 W., Tps. 36, 37, 38 and 39 N., Rs. 3 and 4 W., Tps. 37 and 38 N., R. 2 W., all of N. M. P. M. on the drainage of the Piedra River, San Juan National Forest, known as the Upper Piedra Unit, estimated to cut about 800,000 cords of pulpwood, approximately 65 per cent Engelmann and blue spruces and 35 per cent white and alpine firs, together with 110,000,000 feet B. M. of Douglas fir, 60,000,000 feet B. M. of western yellow pine, and 1,000,000 feet B. M. of limber pine, which Douglas fir and pines are to be cut at the option of the purchaser.

No bids will be considered which offer less than: For the timber on the South Fork Unit, $1 per cord of unpeeled pulpwood of spruces, white fir and alpine fir, and at least twice the cord rate per M feet B. M. for material of these species taken out in sawlog form, and $2.50 per M feet B. M. for Douglas fir and all species of pines. For the timber on the Upper Piedra Unit, $.75 per cord of unpeeled pulpwood of spruces, white fir and alpine fir and at least twice the cord rate per M feet B. M. for material of those species taken out in sawlog form, and $2.00 per M feet B. M. for Douglas fir and pines. Separate bids must be submitted for each unit, but the right is reserved to award on the basis of the most advantageous offer for both units, or to reject any bid for either unit, or to reject all bids. Agreement, as part of any bid, to take all or specified amounts of the optional species may be considered in determining the most advantageous offer.

$50,000 must be deposited with each bid on the South Fork Unit, and $25,000 must be deposited with each bid on the Upper Piedra Unit, to be applied on the purchase price, refunded or retained in part as liquidated damages according to the conditions of sale.

Before bids are submitted, full information concerning the timber now offered, the reservation of additional areas, the showing of financial responsibility required of bidders, the other conditions of sale, and the submission of bids should be obtained from the District Forester, Denver, Colo., or, for the South Fork Unit, from the Forest Supervisor, Monte Vista, Colo., or, for the Upper Piedra Unit, from the Forest Supervisor, Durango, Colo.

Forest Fires

(*Continued from page* 217)

Anyway some people own a million or more acres each. Only about five per cent of the state is cleared and there are a million more acres that can probably be bought for less than five dollars an acre. Such value on land is a joke in a region of sub-tropical climate where there is plenty of water and where countless things can be successfully grown on even the poorest of soils.

For many years these lands have been the football of speculators and promoters. A more serious minded type of ownership must develop before fires can be stopped and forests grown. In my opinion the Federal Government should demand back all lands acquired by fraud. The states should take back and permanently hold all lands in arrears for taxes. These lands should be held for reservations and protected or opened to bona fide homesteaders. That will remove a lot of land from the real estate market.

In other words, we should strive to build up taxable values. The reverse through despoilation has been happening for a long time. We need not only a forestry conscience but a land conscience. Land at two or three dollars an acre is something like one one-hundredths of a cent a square foot. In many instances the moss on the trees is worth more than the land. The improvement of these lands is what really adds to the wealth of a nation. Even the poorest of them are an integral part of our country and their destruction is constantly pulling down our average acre wealth. All land is a sacred heritage which should be handed down to posterity in as good shape as we received it. Otherwise we have failed and passed to our city brethren the bulk of the burden of necessary taxation.

Merrill Becomes Director of New York Botanical Garden

Dr. Elmer Drew Merrill, until recently Dean of the College of Agriculture and Director of the Agricultural Experiment Station of the University of California at Berkeley, has been appointed Director-in-Chief of the New York Botanical Garden. Dr. Merrill succeeds Dr. Nathaniel Lord Britton, who occupied this position for more than thirty-three years and whose resignation was effective on August 1, 1929.

National Forests Need Replanting

More than 2,100,000 acres of National Forest land, denuded by bad fires in the past or destructive logging prior to federal administration, need to be artificially planted with trees, the United States Forest Service has announced. Last year, it is stated, 18,825 acres were planted and new nurseries established increased the area that can be planted annually to between 20,000 and 25,000 acres.

Of the total acreage planted in 1928, 11,417 acres were in Michigan where private contributions facilitated reforestation work. Due to private contributions, notably in this state and in Washington, and to an increase in the federal appropriation for planting, nearly fifty per cent more land was planted in 1928 than in any year during the past decade. Nevertheless, at the present rate of planting, it is pointed out, it will take approximately 100 years to plant the 2,100,000 acres. Meanwhile new land purchases are continually adding to the area needing reforestation.

Monsson Leaves Madison

W. H. Monsson, chemist on the pulp and paper staff at the United States Forest Products Laboratory, Madison, Wisconsin, has resigned to join the Munising Paper Company, Munising, Michigan. Mr. Monsson, who is a graduate of the University of Illinois, accepted appointment to the Forest Products Laboratory staff in 1923. The major portion of his time has been spent on sulphite pulping research. It is expected that in his new position Mr. Monsson will be concerned with both production and research.

Canadian Newsprint to U. S.

During 1929, Canada exported to the United States 2,173,087 tons of newsprint and in addition 543,514 tons of wood pulp. This includes mechanical pulp and chemical pulp. The exports of newsprint and pulp exceeded the similar exports during the year 1928 by several thousand tons. The United States is by far the greatest consumer of Canadian newsprint and pulp material, receiving more than all the rest of the world combined.

NOMINATE YOUR FRIENDS FOR MEMBERSHIP

Fill in the last line and mail the Application Blank to a friend. He will appreciate the courtesy

Application for Membership in The American Forestry Association

Date_____

The AMERICAN FORESTRY ASSOCIATION
1523 L Street N. W., Washington, D. C.:

I hereby apply for membership in The American Forestry Association and enclose $_____

INDICATE CLASS OF MEMBERSHIP DESIRED

☐ Subscribing membership, per year, including Magazine	$4.00
☐ Contributing Membership, per year, including Magazine	10.00
☐ Sustaining Membership, per year, including Magazine	25.00
☐ Life Membership (no other dues for life), including Magazine	100.00
☐ Patron Membership (no other dues for life), including Magazine	1,000.00
☐ Annual Membership, without Magazine	1.00

Canadian Postage 25c extra, Foreign 50c extra, on Subscribing Memberships

PLEASE LETTER OR TYPE NAME AND ADDRESS

*Name*_____

*Street*_____

*City and State*_____

*Business or Profession*_____

Nominated by_____ April, 1930

Large Timber Cut in Southwest

The 1929 timber harvest of 127,627,000 board feet is the largest ever cut in any one year since the National Forests in Arizona and New Mexico were established, according to the United States Forest Service. This timber, valued at $316,720, was cut as commercial sales. In addition, 49,109,000 board feet, valued at $122,548, was cut under land exchange agreement. The money received from timber cut on land exchange agreement is used to acquire private land of value for the production of future crops of timber for inclusion in the National Forests.

Examine Game Protection Areas

Upon request of Representative McReynolds of Tennessee, a member of the Migratory Bird Commission, Assistant Secretary of Agriculture R. W. Dunlap has stated that representatives of the Biological Survey have examined over one hundred areas scattered in various parts of the United States for sanctuaries for the protection of wild life. No meeting of the commission has been called pending an examination and advice of a qualified biologist. Assistant Secretary Dunlap states that during the coming spring the Department hopes to outline for the consideration of the commission a program of the refuge acquisition requiring an appropriation in the neighborhood of $200,000 for the fiscal year 1931.

Cooperation of Biologists Wanted

Biologists interested in trees or in biotic events in general can render valuable aid in building up authoritative data in regard to the time of leafing, flowering and fruiting of forest trees, writes C. Edward Behre, Director Northeastern Forest Experiment Station. The station, Mr. Behre says, is starting this spring a phenological project designed to secure specific information on the leafing, flowering, and fruiting of forest trees, their periods of growth, and other allied biotic information. The study is to be limited to the northeast, and the cooperation of those interested in natural phenomena is very much desired.

"The information secured from this census, based as it must be upon long time observations," writes Mr. Behre, "should be of pronounced interest to all workers in the biological sciences. For example, pathologists and entomologists must correlate the seasonal development of host plants with the behavior of fungal and insect pests. Likewise, in forest fire work, the leafing out and defoliation of hardwood trees mark the opening and closing of the spring and fall seasons respectively in this region. . . . Specialists in game propagation realize that there is a close relationship between vegetative cover and animal life.

"Since it is obviously a physical impossibility for any one agency to conduct such a study for the Northeast as a whole, this office is soliciting other biological workers for aid in making these observations. It has occurred to us that perhaps there are members of The American Forestry Association who, while not necessarily engaged in scientific work, are sufficiently interested in natural phenomena to make such phenological observations."

Members of the Association interested in this work and its possibilities should get in touch with Mr. Behre, whose address is Northeastern Forest Experiment Station, Amherst, Massachusetts.

Balances Wild Life Ledger

The toll of livestock taken by coyotes, wolves and other predatory animals is estimated to run between twenty and thirty million dollars annually, says Paul G. Redington, Chief of the Biological Survey.

This, he adds, is only a tithe of the economic losses suffered from rats, prairie dogs, ground squirrels, pocket gophers, jack rabbits and other rodents. The predatory species, when too numerous, also tend to reduce the abundance of valuable wild species in their depredations day after day on deer and other big game and on important species of wild fowl, he states.

REGULATION

UNITED STATES Forestry Style Uniform

No guesswork when you buy an outfit here—It will look right, fit right, wear right and—Be RIGHT—RIGHT from start to finish.

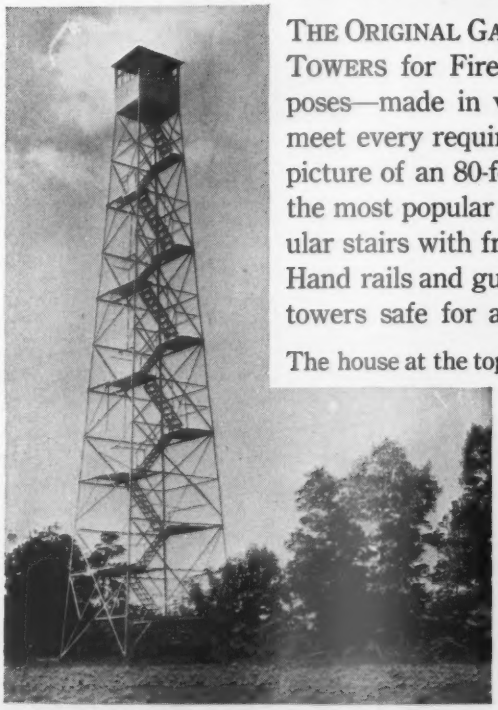
Write for NEW Illustrated Catalog with Samples and Prices attached

Write for our Special Forest Service Suit Offering

SMITH-GRAY
740-4 Broadway New York

FIGHT FOREST FIRES WITH *AEROIL KEROSENE TORCHES*
Full Information in Bulletin No. 76F
AEROIL BURNER CO., Inc. West New York, N. J.
Branch: 176 N. Wacker Drive, Chicago, Ill.

FIRE TOWERS



THE ORIGINAL GALVANIZED STEEL TOWERS for Fire Protection purposes—made in various styles to meet every requirement. . . . This picture of an 80-foot tower shows the most popular type. It has regular stairs with frequent landings. Hand rails and guards make these towers safe for anyone to climb.

The house at the top provides comfortable quarters for the observer and protection for his instruments and charts.

36-page descriptive booklet of Forest Service Towers sent upon request . . . Write

AERMOTOR CO. .. *2500 Roosevelt Road, Chicago*

Mention AMERICAN FORESTS AND FOREST LIFE—*It Helps*

Index to ADVERTISERS
APRIL, 1930

	Page
Aermotor Company	255
Aeroil Burner Co., Inc.	255
Agriculture Department, U. S.	254
Aiken, George D.	249
Alhambra Hot Springs Hotel	242
Anchor Post Fence Company	245
Ballard & Co., J. O.	250
Bangor & Aroostook Railroad	239
Bartlett Manufacturing Company	244
Beard Outdoor School, Dan, The	241
Bessemer Galvanizing Works	251
Blue Ridge Park Nurseries, Inc.	249
Bogle, M. E.	243
Boyd Nursery Company	242
Bristol, H. R.	249
Burnell, Florence C.	248
Central Maine Forest Nursery	249
Chicago, Milwaukee, St. P. & Pac. R.R.	231
Colorado School of Forestry	250
Coolidge, P. T.	251
Double Dee Ranch	241
Elm City Nursery Company, The	249
Fechheimer Bros. Company, The	253
Fleu, Conyers B., Jr.	249
Franklin Forestry Company	249
Franklin Forestry Company	246
Harvard Forest	250
Hauck Manufacturing Company	251
Hill Nursery Company, D.	248
Hough Company, Romeyn B.	242
Indianfield Pheasantry	243
Intl. Harvester Co. of America, Inc.	235
Jones Nursery Company, E. W.	249
Jones Nurseries, J. F.	248
Keene Forestry Associates	249
Kelsey Nursery Service	Frontispiece
LaBars' Rhododendron Nursery	247
Lager & Hurrell	249
Lakewood Dahlia Gardens	249
Lane, Thomas J.	249
Lee & Company, Inc., Geo. S.	243
Leitz, Inc., E.	238
Living Tree Guild, The	239
Loganbrae Kennels	243
Lovett's Nursery	248
Morris Nursery Company	247
Moto-Mower Company	245
Naperville Nurseries	249
Nat'l. Lumber Mfrs. Association	237
Nat'l. Printing & Engraving Co.	253
N. Y. State College of Forestry	252
Norris, J. F.	248
North-Eastern Forestry Company, The	249
Northern Pacific Railway Company	233
Old Town Canoe Company	241
Oregon School of Forestry	252
Outdoor America	241
Pacific Marine Supply Company	4th Cov.
Piedmont Forestry Company	249
Princeton Nurseries	248
Radisson Hotel	242
Richards, Edward C. M.	253
Robbins, E. C.	240
Rockfall Nursery Company, The	249
Schumacher & Sons, F.	243
Schumacher, F. W.	246
Scott & Sons Co., O. M.	247
Sewall, James W.	250
Shearer, W. F.	249
Smith & Company, D. B.	251
Smith-Gray	255
Stoeger, Inc., A. F.	241
Swedberg Bros. Nurseries	248
University of Idaho School of Forestry	252
" " Maine	250
" " Michigan	250
Van Yahres Tree Surgery School	244
Vaughn-Eames, Henry	244
Verkade's Nurseries	248
von Dewitz, Dr.	243
Wahl & Ferguson	244
Western Maine Forest Nursery	246
Weyerhaeuser Sales Company	3rd Cov.
Winchendon Forest Nurseries	246
Wisconsin Aquatic Nurseries	241
Wohlert, A. E.	239
Yale School of Forestry	252

"WHO'S WHO" AMONG THE AUTHORS IN THIS ISSUE

Stewart H. Holbrook

STEWART H. HOLBROOK is editor of the *Four L. Lumber News*, as well as a contributor to many of the leading magazines in America. Although now living in Portland, Oregon, he was born in Newport, Vermont, on the Canadian border, and grew up in logging camps, taking part in many river drives. During the World War he served in the 303d Field Artillery and saw much action on the Meuse-Argonne front. He writes that he smokes a pipe with either Canayen shag or Louisiana perique.

GEORGIA WILLIAM MORITZ is an editor on the Lake Charles, Louisiana, *American Press*, and has written much for newspapers and magazines. "My idea of a real vacation," she writes, "is to pack the coffee pot in the car and go gypsying."

Arthur E. Morgan

ARTHUR E. MORGAN, president of Antioch College, Ohio, is an eminent engineer who has dealt firsthand with many large problems of water control. Following the great Ohio flood in 1913 he was chosen as chief engineer of the Miami Conservancy District and given the responsibility of preventing a recurrence of the Dayton flood. Born in Cincinnati, Ohio, and educated at the University of Colorado, Mr. Morgan became supervising engineer of the United States Government drainage investigations in the Southern States in 1907. Several years later he planned the $8,000,000 reclamation project for St. Francis Valley, Arkansas, and in 1915 became president of the Dayton-Morgan Engineering Company. In 1921 he was appointed chief engineer of the Pueblo, Colorado, Conservancy District.

Mr. Morgan is author of many books and publications, among them *Mastering the Mississippi, My World, The Miami Valley and the 1913 Flood, and What Is College For?*

G. E. BENTLEY makes his home at Jamestown, New York.

H. H. CHAPMAN, Harriman Professor of Forest Management at the Yale Forest School, is one of the nation's senior foresters, playing a major part in the establishment of the first National Forest in the country in Minnesota. He was born at Cambridge, Massachusetts, and received his B. S. and B. Agr. degrees at the University of Minnesota, and his M. F. degree at the Yale Forest School. From 1898 to 1903 he was superintendent of the State Agricultural Experiment Station at Grand Rapids, Minnesota, and served with the United States Forest Service from 1904 to 1905. His outstanding books are *Forest Valuation, Forest Mensuration* and *Forest Finance*. He was formerly a director of The American Forestry Association.

John C. Gifford

JOHN C. GIFFORD, of Coconut Grove, Florida, is one of the senior group of American foresters, really a pioneer in the field. He was the founder of "The Forester," published in New Jersey and the forerunner of this magazine, having been purchased by The American Forestry Association in 1897. Mr. Gifford is noted as an author as well as a tropical plant explorer.

D. S. OLSON is Chief of Planting in the northern Rocky Mountain district of the United States Forest Service. A mile of trail holds more interest for him, he confesses, than Main Street.

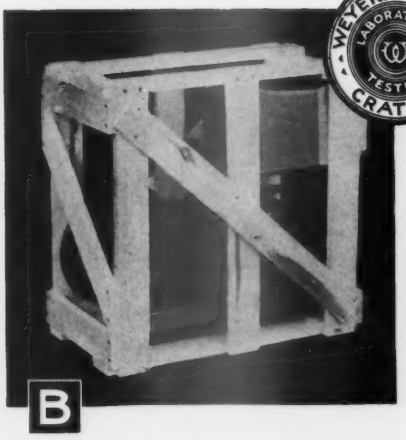
RACHEL M. HUTCHINSON is a native of Wisconsin, but makes Ardmore, Oklahoma, her home. It was in Colorado, though, that she first wrote of the outdoors, and became really acquainted with nature. Recently, she was awarded a prize for having one of the most attractive gardens in Ardmore.

JULIETTE MOURON HOOD is a great lover of the high Sierras in California and a keen student of their intriguing history. Living at Sonora, California, she has written much of the high country made famous by Bret Harte, Mark Twain and the great California gold rush of 1849.

G. H. COLLINGWOOD is Forester for The American Forestry Association, and ERLE KAUFFMAN is an Assistant Editor of AMERICAN FORESTS AND FOREST LIFE.

NOW COST-CUTTING HAS REACHED THE SHIPPING ROOM

When Crate A was shipped to our Laboratory at Cloquet, we found it running high in cost because of its excessive weight due: (1st) to the use of an excess amount of lumber of unnecessary thickness; (2nd) to superfluous blocking. Furthermore, the bracing was ineffective.



This seal on your crates marks them as scientifically designed, laboratory tested — worthy of the product they protect.

Crate B was the result of Laboratory analysis and tests and shows a 40% saving in lumber and a 45% saving in weight — resulting in substantial reduction of costs. Thinner members, properly spaced and braced diagonally, gave greater rigidity and strength and being easier to assemble, lowered labor costs.

Weyerhaeuser Cut-to-Size Crates Bring Savings to the Manufacturer of Standardized Lines

WHETHER you are satisfied with your crate *as is* or whether you believe savings can be effected, Weyerhaeuser can be of service to you.

In the first instance, we can offer the extensive Weyerhaeuser resources for specialized manufacturing service at remarkably low cost, and in the second, we can put at your disposal the modern Weyerhaeuser Laboratory Method of Analysis and Design.

Many crates now in use are soundly designed and properly assembled, yet Weyerhaeuser Crating Engineers frequently are able to suggest safe substitutions of lighter weight wood, which result in lower costs immediately. If investigation shows a need for change in design or assembly, the Weyerhaeuser Laboratory Method points the way — showing you the minimum amount of lumber required and an accurate scheme of fast, easy assembly that will result in: adequate rigidity and strength for protection, greater efficiency, neater appearance, and a real reduction in cost, both in labor and shipping weight.

For the manufacturer who is unable to take advantage of the economies of cut-to-size crates, Weyerhaeuser offers a variety of ideal Light Weight Crating Woods. In standard grades and sizes light weight, non-splitting and of ample strength to assure adequate protection, these woods make possible unusual savings in both labor and freight costs.

Identified by this seal, Weyerhaeuser Cut-to size Crating brings the economies of scientific planning, large scale sawing, and waste elimination to any manufacturer requiring containers individually designed to fit standard products.

Our immense facilities for specialized manufacture and our extensive experience in meeting industrial requirements, are important factors in the accomplishment of these results.

Let us give you estimates on your present requirements for cut-to-size crates. If, in addition, you desire our analysis of your crating costs, our district representative will be glad to arrange it.

Crating Sales Division

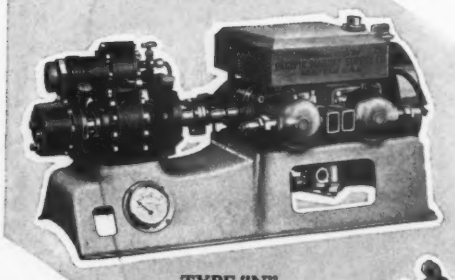
WEYERHAEUSER SALES COMPANY

307 NORTH MICHIGAN AVENUE — CHICAGO, ILLINOIS

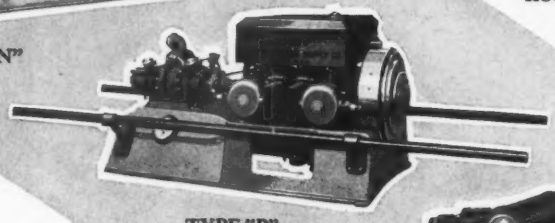
PACIFIC PUMPERS

World's Best Portable Fire Fighting Equipment

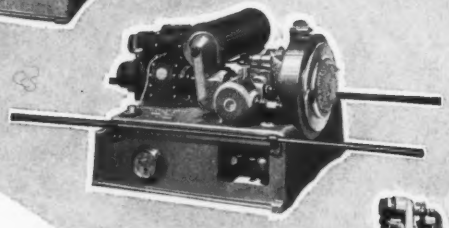
Recognized by forestry and conservation officials and organizations in four countries as the most efficient of all light weight portable fire fighting equipment. Four highly perfected models in the 1930 line, with refinements in design and construction that make each model a marvel of efficiency and power. No equipment can touch these pumpers for weight efficiency and dependable service under all kinds of conditions. Each model equipped with famous Northern Pump. These pumpers are designed primarily for fighting forest and brush fires, protecting docks and warehouses, irrigating and the innumerable uses for a pumper which can be taken to the water supply.



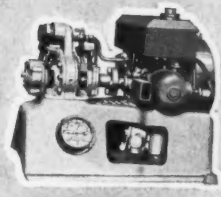
TYPE "N"



TYPE "P"



TYPE "K"



TYPE "A"

FOUR FAMOUS MODELS

TYPE "N" PUMPER—Wt. 70 Lbs.

One-man unit. Weight 70 pounds. *Dimensions:* Base 24" by 11¼"; height 12¾". Gross weight boxed for shipping, approximately 100 pounds. *Capacities:* 36 gallons per minute at 135 pounds pressure through 5/16" nozzle opening; 43 gallons per minute at 105 pounds pressure through ⅜" nozzle opening. Capable of pressures up to 175 pounds in practical operation.

TYPE "P" PUMPER—Wt. 175 Lbs.

Two man unit. Weight 175 pounds. *Dimensions:* Base 31½" by 15¼"; height overall 17"; length over all including carrying handles 58". *Capacities:* 130 gallons per minute at 100 pounds pressure; 120 gallons at 150 pounds pressure; 100 gallons at 175 pounds pressure. Capable of pressures up to 180 pounds per square inch. Four cylinder motor. A powerful and efficient pump.

TYPE "K" PUMPER—Wt. 85 Lbs.

Two man unit. Weight 85 pounds. *Dimensions:* Base 19" by 15"; Extreme height 14"; Shipping weight 125 pounds. *Capacities:* 66 gallons per minute at 75 pounds pressure; 58 gallons at 100 pounds; 46 gallons at 120 pounds; 35 gallons at 140 pounds. Capable of pressures up to 155 pounds; although not a high pressure but rather a volume pump. Has 2-cylinder motor.

TYPE "A" PUMPER—Wt. 38 Lbs.

The lightest weight, most highly efficient portable pumping unit ever devised—a real one-man fire fighting unit. *Weight* 38 pounds. *Dimensions:* Base 16" by 12¼"; extreme height 13¼". Shipping weight 65 pounds. *Capacities:* 27.6 gallons per minute at 80 pounds pressure; 18.8 gallons at 105 pounds; 10 gallons at 120 pounds. Has two-cylinder motor.

Far East Representative

J. T. MASHIKO
679 Marunouchi Building
TOKYO, JAPAN

Which Catalog?

Separate catalogs are issued describing each type of pumper. In writing for literature kindly specify which Type of Pumper interests you.

Manufactured in Seattle, U. S. A. by

PACIFIC MARINE SUPPLY COMPANY

PRESS OF
JUDD & DETWEILER, INC.,
WASHINGTON, D. C.